EUROPEAN UNION
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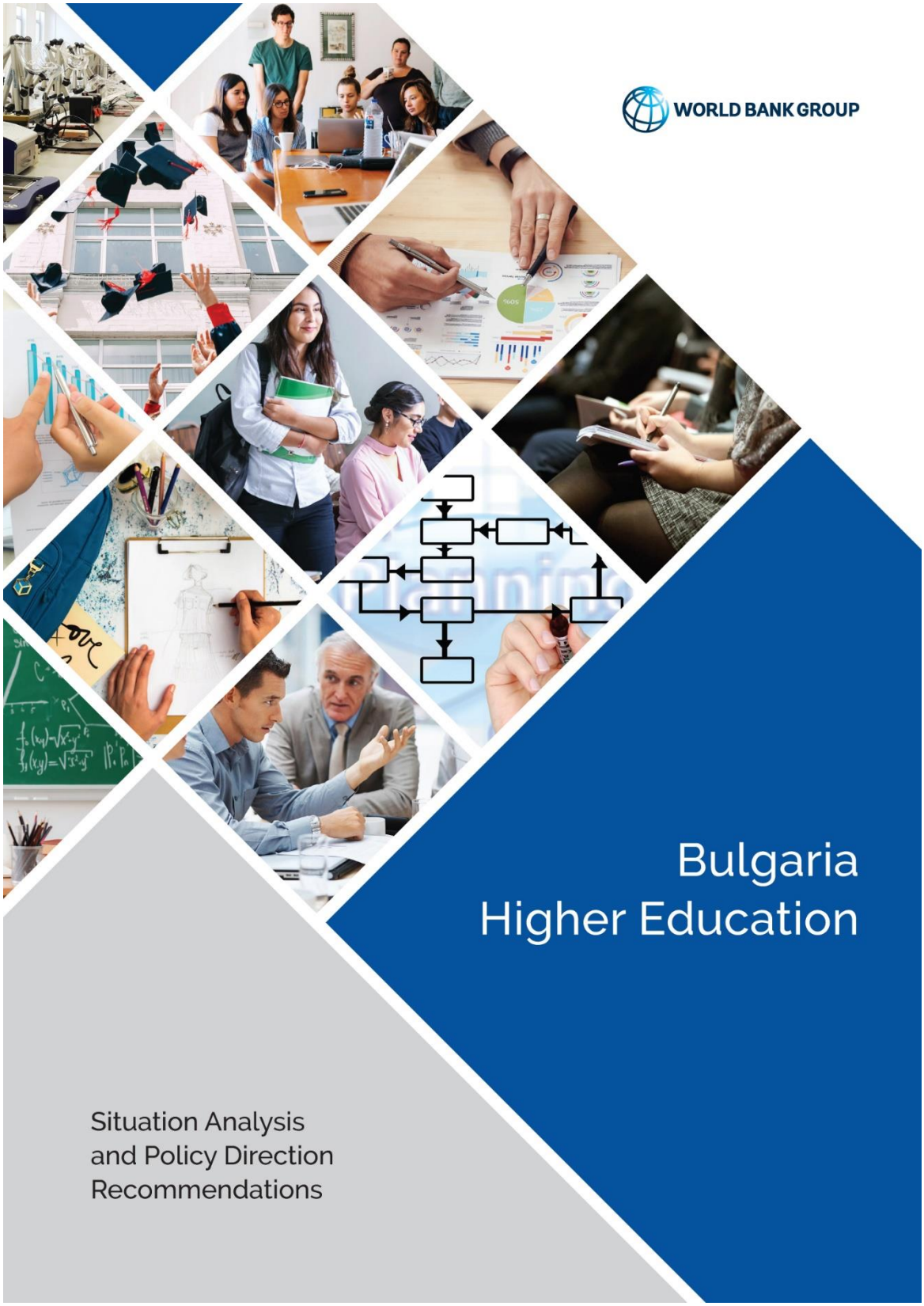
OPERATIONAL PROGRAMME
SCIENCE AND EDUCATION
FOR SMART GROWTH

Reimbursable Advisory Services Agreement on Public Expenditure Review in Science, Technology and Innovation and Support for Building Evidence-based Approach for the National Strategic Framework in Education 2030

PILLAR 2: Support for Building an Evidence-Based Approach for the National Strategic Framework in Education 2030

# Higher Education in Bulgaria:
# Situation Analysis and Policy Direction Recommendations

BG05M2OP001-4.001-0008 "Provision of information and publicity activities of the Operational Programme Science and Education for Smart Growth, evaluations and studies of Operational Programme Science and Education for Smart Growth and preparation for the next programming period" under priority axis 4 "Technical Assistance" of the Operational Programme Science and Education for Smart Growth"



WORLD BANK GROUP

# Bulgaria
# Higher Education

## Situation Analysis and Policy Direction Recommendations



EUROPEAN UNION
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## ACKNOWLEDGEMENTS

This report was produced by a core team led by Husein Abdul-Hamid (Senior Education Specialist, Task Team Leader), Dessislava Kuznetsova (Education Specialist, Co-Task Team Leader), Alina Sava (Senior Education Specialist), Denisa Meirosu ((Senior Operation Specialist), and consultants Margo Hoftijzer, Deyan Kolev, Romina Miorelli, Radostina Angelova, Assenka Hristova, Maria Ustinova, Walid Madhoun, Kristina Nikolova, Iordan Iossifov, Velizar Stefanov, Stefan Lazarov and Borislav Zlatkov. Adela Delcheva (Operations Assistant) provided administrative support. The team received valuable guidance from the World Bank leadership, Fabrizio Zarcone (Country Manager) and Harry Anthony Patrinos (Practice Manager).

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# Abbreviations and Acronyms

| | |
|---|---|
| BURS | Bulgarian Universities Ranking System |
| EC | European Commission |
| EHEA | European Higher Education Area |
| EQF | European Qualifications Framework |
| ESL | Early School Leavers |
| ESIF | European Structural and Investment Funds |
| EU | European Union |
| GER | Gross Enrolment Rate |
| GDP | Gross Domestic Product |
| GoB | Government of Bulgaria |
| HE | HE |
| HEI | Higher Education Institution |
| ISCED | International Standard Classification of Education |
| MES | Ministry of Education and Science |
| MLSP | Ministry of Labour and Social Policy |
| MS | Member State |
| NAVET | National Agency for Vocational Education and Training |
| NEAA | National Evaluation and Accreditation Agency |
| SDHE 2014-2020 | Strategy for the Development of Higher Education 2014-2020 |
| SDHE 2021-2030 | Strategy for the Development of Higher Education 2021-2030 |
| NSI | National Statistical Institute |
| OPSESG | Operational Programme for Education and Science |
| QA | Quality Assurance |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| VET | Vocational Education and Training |
| WB | World Bank |



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# Executive Summary

**This report is an input toward technical assistance that the World Bank is providing to the Government of Bulgaria (GoB).** This technical assistance is aimed at supporting for the Bulgarian Ministry of Education and Science in the development of evidence-based policies, particularly in the implementation of the forthcoming National Education and the Higher Education Strategies for the 2021-2030 period. It also aims to contribute in the design of programme options to include in the Operational Programme for Education under preparation for the EU financial period 2021-2027. **The report focuses on higher education (HE) and offers a situation analysis and recommendations for policy directions. It reflects the comments received by MES and EAOPSESG as of February 25, 2021.**

**Each section of this report includes references to ongoing or planned measures related to the topics discussed and key challenges identified as still pending to be addressed.** The policy directions noted in current strategic planning for the sector are integrated in the discussions. The sections also include a selection of good practices that can be taken into consideration for drawing lessons in the design of the concrete initiatives adopted to address the challenges identified.

**The higher education (HE) system in Bulgaria is fragmented.** In the past two decades the programmatic offer in HE has multiplied in Bulgaria with the objective of attracting students but sometimes without adequate staff capacity. Mapping the sector as proposed in the National Strategy for the Development of Higher Education 2030, can help to identify gaps, overlaps and potential for further developments. Yet, this process should ensure that both dynamism and quality of the sector's programmatic offer are fostered. This requires not only assessing the types of degrees and areas of research in which HEIs are specialised vis-à-vis regional realities but also that the system remains flexible and attractive, as well as accessible, to diverse students' profiles. An adequate QA system is key to ensure this balance and the resulting map could be also used as an information tool for students in the form of a geo-referenced map.

**Two legal Acts and key strategic documents constitute the core policy framework within which HE sector operates.** These two acts are the HE Act and the Development of Academic Staff Act. The state, however, has less rights to intervene in the definition of strategic priorities of private higher education institutions (HEIs). A Strategy for the Development of Higher Education in Bulgaria was developed for the first time in the country for the period 2014-2020 and the new strategy for 2021-2030 was adopted by the Parliament in December 2020. The implementation of this strategy would benefit from a detailed assessment of the results and obstacles encountered in the implementation of the previous strategy and the use theories of change in the planning of actions.

**Enrolment numbers in HE decreased significantly in the country in recent years and this can impact negatively on an economy that seeks to become more competitive.** Between 2012 and 2017 the number of enrolments in tertiary education decreased by 12.3 percent, from 284,995 to 249,937 but the net enrolment rate grew from 61.4 percent in 2012 to 71 percent in 2017 which reflects mainly high emigration trends. Increasingly, however, the economies of the EU are demanding a higher



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skilled workforce, so these low number of graduates jeopardises development opportunities for the country. Widening participation in HE to include sectors that are less represented in the HE student population is an avenue that could be explored as a form of rising the skills and educational attainment levels of the labour force in the country.

**The National Strategy for HE adopted in 2015 set out a target for educational attainment of 30-34 years old that has not been attained yet.** As of 2019, the share in the population of 30-34 years that holds a tertiary education degree was still below 33 percent, whereas the target set for 2020 was 36 percent. Bulgaria still has the third lowest share of people with high level of education in the country. Part of the explanation of the insufficient progress towards this target can be found in the very definition of the age group considered in the target – those aged 30 to 34. This means that the biggest share of the first graduates that left university in the time period covered by the strategy will be part of the age groups defined in the target only after 2020. But low progress in achieving the target also indicates that more lifelong learning opportunities in HE for those beyond the theoretical age for this level of education could have been created. Programmes that are designed as flexible in terms of their schedule are essential to facilitate their participation and, at the same time, to ensure these students achieve a good quality of learning outcomes. Furthermore, in post-pandemic scenario decisions about modes of enrolment and delivery will be of central importance.

**Nearly all secondary school graduates who successfully pass the national matriculation exam have the possibility to access HE in Bulgaria disregarding his or her grades, but talented individuals that received low quality pre-university education may be ill-equipped to take advantage of this opportunity.** The admission to HE of students with very low performance in their national matriculation exam and the fact that most years not all the places made available are filled is a concern in Bulgaria. In the 2019-2020 period, 3729 places remained vacant. But since grades determine which programmes candidates are admitted in, talented and motivated individuals who receive low quality pre-university education may obtain exam results that are relatively low compared at national level and may choose to stop their education if not able to access their programmes of choice. Remedial classes to support the preparation for the matriculation exam of those most engaged in vulnerable schools or an entry model that weights in performance at local or school level are options that could be explored. The COVID pandemic has increased the competition for places in Bulgarian HE and for the academic year 2020-2021 only 1 every 8 candidates were admitted in HEIs; if this new scenario remains these measures to guarantee equal opportunities at entrance will be more needed.

**Bulgaria is the country of the European HE Area (EHEA) where those from the most socially disadvantaged sectors are the least represented in its HE student population and there are persistent gender imbalances at the level of study fields in the sector.** In 2015 only 1.8 percent of HE students in Bulgaria were from families whose parents had low level of education (less than lower secondary) and data on graduates by field of study show that men are highly overrepresented in engineering related degrees whereas women are overrepresented in education and health as well as in masters' degrees. Efforts to address these imbalances may not just contribute to widen participation but also could prove crucial to achieve the expectations of the government in terms of increasing the number of graduates in these fields as per the recent introduction of the "priority fields", which are those in which the government forecasts there will be labour market shortages. Looking more into the factors underpinning these imbalances, such as understanding why different



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sexes enrol in these fields or what are the additional socio-economic characteristics that can be shaping individuals' choices, could lead to policy ideas to address it.

**A context in which HEIs offer increased rapidly and enrolments are decreasing places significant challenges regarding quality both for teaching and learning and for research.** Two outstanding concerns regarding the quality of teaching in HE in the country regard the age of the staff and their lack of internationalization. The Bologna Progress Report for 2018 showed that in most EHEA countries the largest share of academic staff is concentrated in the 35-49 age group, whereas in Bulgaria, more than 50 percent of the staff is above 50. Age per se should not be a criterion for selection of the academic staff. Yet, a lack of opportunities for career development and the system of wages based on the staff's length of service rather than on their performance, disincentivizes innovation and quality enhancement on the part of those with most years of experience in the profession and discourages younger staff. The low participation in international exchange opportunities, findings show, is related to lack of enough foreign language skills but, more importantly, to lack of monetary resources for maintenance abroad and to time constraints.

**Two well-established processes that contribute to ensure and enhance quality in HE are in place in Bulgaria – the quality assurance agency's procedures and the university ranking system.** However, the methodology of National Evaluation and Accreditation Agency (NEAA) is under criticism for leading to similar and high-grade results in all assessments. The introduction of more objective indicators and more emphasis on the inclusion of foreign experts in these assessments are under consideration to address these problems. The BURS is a key instrument used for management and policy purposes but less for prospective students' career planning, which was the intention underpinning its creation according to the views gathered from stakeholders involved in the development of the system. Measures such as integrating the geo-referenced map of the HE offers could boost students and families' use of the BURS. Survey components of the BURS are implemented less frequently than the year basis on which the ranking is overall updated. The dependence of the BURS on external financial support and preference for objective data explain this. Yet, the more comprehensive and nuanced picture that regular surveys allow for can be a critical supplement to administrative data in supporting management decisions.

**Several well-coordinated measures have been introduced in recent years to improve the quality of research in Bulgarian universities and while their outputs increased significantly since then, these publications are not impactful enough.** In addition to the amendments to the Development of the Academic Staff Act aforementioned, a key measure aimed at improving quality of research has been the introduction of performance-based funding for HEIs, which uses data on employment outcomes and research production collected by the BURS. The number of research outputs grew at a rate of almost 9 percent per year from 2015 to 2019. Yet, Bulgaria is ranked last among its peers in scientific publications among the top 10 percent of most cited publications worldwide as a percentage of total publications in the country in 2019. The use of performance-based funding may have negative implications for regional HEIs and jeopardise equality of opportunities for competition among HEIs. The planned introduction of a system to grant universities the label of "research universities" needs to ensure that, as intended in this plan, the duration of four years for these designations is closely followed-up so the emergence of a static system, thus less prone to innovation, is avoided. Adopting a classification system or fine-tuning the performance-based formula are alternatives that could be explored instead.



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**While returns of HE continue to be high in Bulgaria, concerns are focused on misalignments between the fields in which HE students graduate and the areas of the economy in which they work or there is labour market demand.** HE graduates have significantly better employment rates and income levels than those with lower education levels. In 2019, 88.4 percent of HE graduates were employed in Bulgaria and 85.3 percent in the EU. Yet, the GoB forecasts and development priorities indicate that more graduates are needed in the areas of STEM and instead, graduates in the fields of Business and Law studies continue to be high whereas those from ICT and STEM are still low.

**The GoB introduced a list of "priority professional fields" which aims at incentivising enrolment in areas where there is projected labour market needs and focuses on STEM fields.** However, while between 2017 and 2019, a slight increase in the share of ICT graduates was registered, still less than 5 percent of graduates obtain degrees in this field. This increase in the share of ICT graduates underpinned a modest growth in the share of graduates in STEM fields, but in the rest of the STEM fields the share of graduates decreased in this period, with the exception of Physics Studies and Biological and related studies, which grew only 0.1 percentage points or remained stable, respectively. Furthermore, the number of graduates in STEM also decreased from 2017 to 2019 by 8.9 percent, in spite of a 5 percent increase in the number of ICT graduates. A shift of focus from strict alignment between discipline and area of employment of graduates and a more nuanced analysis of the employment outcomes of STEM graduates could generate more flexible and transversal competences, respond better to rapid social and economic changes, and help design more tailor-made interventions to align HE with the world of work.

**The governance model of public HEIs is predominantly academically centred but a 2007 amendment to the HE Act stipulates that each public HEIs should put a Board of Trustees in place.** Establishing a Board of Trustees guarantees the participation of business and local representatives in the process of managing HEIs. A number of subsequent amendments have specified further the composition, appointment procedures and roles of these Board, but in a number of HEIs the functioning of such boards is not yet sufficiently effective in practice. A better definition of their role in the Board could contribute to get them more actively involved in the strategic decision-making and implementation.

**Annual public expenditure on tertiary education as a percentage of GDP remains low in Bulgaria and the country is among the EHEA countries that spend the least on research and development, but expenditure for HE in the total education investment in the country is relatively high.** In 2014, half of the countries in the EHEA had spent more than 1.2 percent of their GDP on tertiary education, whereas Bulgaria's expenditure instead was around 0.6 percent of their GDP in that year. Bulgaria spent 0.03 percent of their GDP in research and development in 2014. Only Romania in the EHEA spent less, 0.01 percent. On the other hand, public and private expenditure in higher education as compared to the total expenditure in education in the country has remained relatively stable since 2000 and in absolute terms this expenditure increased significantly since then. Since 2000 the share of public and private expenditure in HE in the total expenditure in education in Bulgaria has remained above 31 percent and on average represented 32.5 percent of the expenditure of education.



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**Financial support for HE in Bulgaria comes from public funds, which are composed of national state funds and EU funds mostly, and from private sources.** Private sources include donations, grants and projects from abroad, rents revenues, consulting services or other commercial activities as well as students' fees. Investment in HE from national funds represents mostly MES transfers to universities for their operational costs. Almost 90 percent of the total of the national funds invested in HE – that is excluding ESIF funds – are allocated to HEIs for these purposes, which include salaries and general maintenance costs. Expenditure in operational costs for universities increased in the 2014-2020 period when compared to 2007-2013, while investment in budget programmes, also known as policy development financing and are the means whereby the government puts in practice its strategic priorities, decreased. However, the budget programme related to research and the development of sustainable relations between education-science and business was significantly increased, which is in line with the emphasis on increasing quality in HE noted in HE policies in the country. The EU funds for HE also decreased from 2007-2013 to 2014-2020. This reflects a strong investment in research and technology beyond HE in the 2014-2020 Operational Programme, no new investments for improving equipment and technological systems in HEIs, and decreased funds for supporting the development of PhDs and young researchers.

**The report concludes summarising the seven challenges identified and key recommendations regarding policy recommendations and options to consider for each of them.** The challenges identified are:

*Challenge 1: To address the fragmentation of the system keeping a balance between quality and flexibility so the system can adapt to changes in the contexts and in students' preferences.*

*Challenge 2: To ensure that strategic action planning builds on lessons learnt*

*Challenge 3: Despite positive enrolment rates, the decrease in the number of students represents a challenge for the increasing demands for high skilled labour force.*

*Challenge 4: Efforts to ensure quality in a system that expanded and diversified rapidly as a response to decreasing enrolments may affect the provision of HE for different students' populations.*

*Challenge 5: Deficits in key tools to assess and measure quality of HE, especially regarding the QA agency current methodology and the incomplete exploitation of BURS' features.*

*Challenge 6: Insufficient impact of Bulgarian university's research in the scientific community and the economy can be partly addressed by designing a system of "research universities", but the details of this proposal have not been yet fully defined.*

*Challenge 7: The introduction of the protected specialties and priority professional fields demonstrates a strong determination to align the HE offer with the needs of the market but this scheme may need to be further underpinned by additional actions.*



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**The key recommendations proposed include:**

- ✓ To build on the requirement to map the HE sector set by the 2020 amendments of the HEA and included in the SDHE 2021-2030, and to conduct this exercise drawing on information from the NEAA and the BURS and complement it with regional development information and students' profile data. The map could be geo-referenced and work as an information tool for prospective students as part of BURS.
- ✓ Regarding strategic action planning, to build in an assessment of results that identifies obstacles encountered to achieve the objectives set out in the previous strategy for the sector, making use of theories of change in planning process.
- ✓ To adopt a multidimensional strategy to encourage and widen participation in HE targeting adequately the less represented sectors of the population in HE and does so from different angles of actions. This would require conducting a detailed analysis of the characteristics of those excluded from access to HE and the adoption of measures to support vulnerable groups' that address not only financial barriers, including the expansion of the offer of programmes designed to be delivered other than in the regular format of full time attendance.
- ✓ Defining roles and synergies across these of the NEAA and the BURS and combine the introduction of quantitative indicators for QA assessments with assessments of teaching and learning that take allow for holistic assessments, at the same time that the BURS could enhance the system by incorporating a graduates' outcome tracer component especially a model that combines this survey with employers' surveys.
- ✓ Regarding the introduction of "research universities", to conduct a thorough review of the system using BURS data and decide on different groups of universities, taking into account their distinctive profiles as well as to evaluate the implications of funding decisions to be based on this categorization of universities as they may discourage research and innovation in some universities.
- ✓ To ensure prospective students make informed choices and that in their considerations they include the assessment of data about the employment prospects of the most looked after specializations in the labour market.
- ✓ To look beyond strict alignment between field of study and job in evaluations of the relevance of HE for the labour market as specialities can provide graduates with a set of transversal skills that enhances their employability across a variety of sectors and occupations. The full transition to competence-based curricula and Implementing more frequently the survey component of BURS would be essential to mainstream this approach.

**The report includes a selection of good practices with the aim of further informing the debate on the concrete design of policy options that can be adopted for the implementation of the SDHE 2021-2030.** In the next steps of this advisory work the sets of policy options presented here can be narrowed down and more details on specific programme components can be outlined and discussed.



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# Introduction

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**The findings presented in this report draw on a combination of policy analysis, quantitative data collection, and interviews with key experts involved in policy implementation in the area of HE.** The documents analyzed range from European position papers and country specific recommendations, to national strategies and technical reports for EU-funded projects in Bulgaria. Data has been gathered from a variety of sources, including global databases, such as World Bank development indicators, European statistics, such as Eurostat, and national databases, including data collected and processed by the Bulgarian National Statistical Institute and the Bulgarian Universities Ranking System (BURS).

**As this report constitutes a first step towards the design of specific programmatic interventions for the implementation of strategic priorities, the interviews incorporated here will be complemented in the next steps of this advisory work with additional ones and further consultations.** For this report initial interviews were held with government staff involved in strategic planning and implementation in HE in Bulgaria including in the Ministry of Education and Science (MES), the National Evaluation and Accreditation Agency (NEAA), the BURS, as well as university rectors, vice-rectors and staff involved in the implementation of EU-funded projects under the 2014-2020 Operational Programme "Education and Science for Smart Growth" (OPSESG).[1] In the next steps of this advisory work further interviews and focus groups with additional stakeholders are planned.

**This report contains seven sections including this introduction.** The next section presents an overview of the HE (HE) system in Bulgaria and of its strategic and policy framework. In section 3 the focus is on issues of access, equity and completion and section 4 looks at quality of teaching and learning and of research. In section 5 the analysis narrows down the focus to explore topics related to the relevance of HE for labour markets and the economy in Bulgaria. Section 6 looks at the governance and financing aspects of the sector and the final section summarises the key challenges and policy options recommendations emerging from the report.

**Each section includes references to ongoing or planned measures related to the topics discussed and key challenges identified as still pending to be addressed.** The policy directions noted in current strategic planning for the sector are integrated in the discussions. The sections also include a selection of good practices that can

[1] The World Bank team members are grateful to all the interviewees that gave us their time during the meetings and responded kindly to additional follow-ups and emails.



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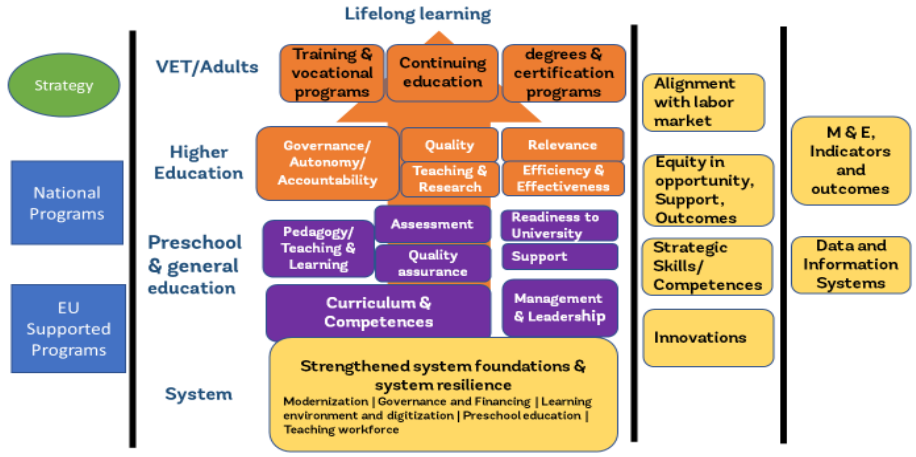
be taken into consideration for drawing lessons in the design of the concrete initiatives adopted to address the challenges identified.

The World Bank Systems Approach's assessment methodology was used to make a structured diagnostic of the education system and assess its orientation and ability to achieve the intended national goals over the cycle of the last education strategy and operation programme. It covers the strategy and policy framework for each subsector, articulating both EU-wide objectives and Bulgaria's main strategic direction. It examines the principal dimensions that, together, determine the performance of the system in relation to access and completion; equity; quality and relevance; and financing and governance. The analysis concludes with a discussion on past, current and future EU-financed support to the sector. The chart below describes the framework for the assessment. Overall, the diagnostic is based on:

1. Review of outcomes based on the results framework of the previous strategy and assess what was and was not achieved. This will include gaps analysis, relevant comparisons, efficiency and returns on investments, perceptions,
2. Review of effect of new policies and public actions during the last decade and its ability to enhance the enabling conditions to improve education system outcomes.
3. Systematic review of programmes and investments and its implementation strategies during the life cycle of the strategy and the OPSESG 2014-2020. This review will investigate programme formulation, indicators identification and utilization, monitoring and evaluation methods and processes, measuring of programme impact on beneficiaries during the life of the process, improvement processes, assessment of implementation process at the different levels.
4. Identifying factors associated will progress or lack of it, provide lessons learned, and policy recommendations.

The methodology of investigation and analysis behind this report include: relevant policy documents, strategic frameworks, operational programme, relevant progress reports, studies and papers; interviews with local experts, focus groups and technical discussions with experts in the Ministry of Education and Science and the Executive Agency Operational Programme Science and Education for Smart Growth; programme evaluation and impact assessment (goals, processes, outcomes) documents based on available information; assessment of relevant political economy dimensions and organisational commitment.

**Figure 1. Analytical conceptual framework for the assessment of the education system in Bulgaria**




## Country context

Bulgaria entered the European Union (EU) in 2007 and was consequently affected by the region's economic crisis in 2010-2012. However, GDP growth has picked up since 2014 and accelerated to 3.7 percent in 2016-2018, due in part to a dynamic export sector which took advantage of improving external conditions and an expanded share in global trade. In 2019 it stood at 3.4%. Bulgaria features a young, energetic local private sector that successfully competes internationally in machine-building, automotive parts, information technology, and outsourced business activities. According to the updated International Monetary Fund (IMF) forecasts from April 2020, due to the COVID-19 outbreak, GDP growth is expected to fall by 4% in 2020, and pick up to 6% in 2021, subject to the post-pandemic global economic recovery.

Traditionally an agricultural country, Bulgaria shifted to a considerably industrialized country. The agricultural sector only accounts for 3.6% of GDP and employs 7% of the workforce (World Bank, 2019). The main crops are sunflowers, tobacco, and wheat. The industry represents 23.8% of the GDP, and 30% of the workforce is employed in the industrial sector, estimated to contribute to 14% of GDP (World Bank, 2019). However, the most dynamic sectors are textile, pharmaceutical products, cosmetic products, mobile communication, and the software industry. The tertiary sector has more than doubled its contribution to the country's economy since 1990, accounting for 59.2% of the GDP and employing 63% of the workforce. Tourism is one of the fastest-growing sectors, with more than 9.3 million tourists visiting the country in 2018, accounting for 11.7% of GDP and 11% of total employment.

Overall, the Bulgarian economy still struggles with low employment and labour force participation. Challenges are posed by a persistently low employment rate, which is amongst the lowest in Europe at 52 percent (see Figure 2). While this has steadily increased over time, it has slightly declined since late 2019. The national Europe 2020 employment target is 70 percent for the population aged 20-64.



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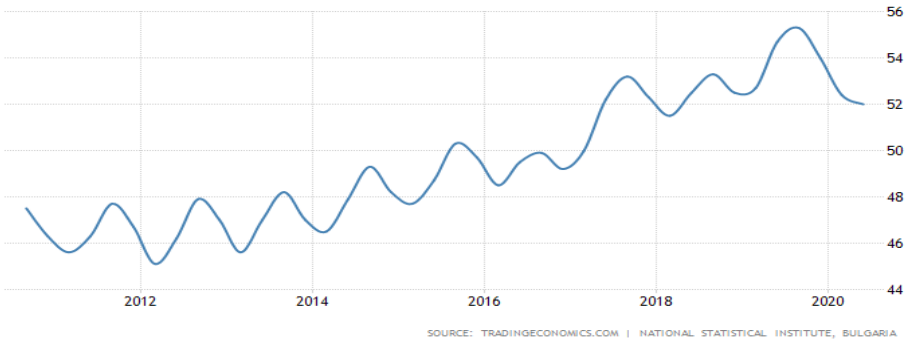
For Bulgaria, low labour participation means that out-of-the-labour-force working-age people do not contribute to economic growth.

**Figure 2. Employment rate recorded between 2012 and 2020 in Bulgaria**




*Source. https://tradingeconomics.com/bulgaria/employment-rate, 2020*

**Bulgaria has a population of seven million people, with 76 percent living in the urban area, which is expected to decrease by half a million until 2030 and by one million until 2050, according to Eurostat, requiring a better balance between policy reforms in education and the economy.** Bulgaria's population has been declining significantly in the last two decades, mostly attributable to a low birth rate and emigration, and is aging rapidly. The dependency ratio in Bulgaria in 2020 is 47.3 %, and it explains the pressure on the productive population imposed by the dependent part of the population. Less than half of the population must produce for the other half represented by children and elderly people and must stay in large percent employed. The negative demographic trends associated with weak public social, health and education services delivered poses one of the main challenges for designing, funding, and implementing future systems. In addition, the living standards for people in danger of marginalization, exclusion, discrimination, and unemployment may deteriorate and need more robust support. If current projections hold, the total number of school-aged children and youth will decline rapidly, prompting the need for education reforms that address quality, access, equity, and relevance. The declining working and student populations have immediate and long-term implications for Bulgarian's human capital and macroeconomic agenda to promote employment and economic growth.

## Overview of the HE system in Bulgaria

**This section presents a brief description of the key characteristics of the HE provision in the country and of the sector's strategic and policy framework.** The first part focuses on one of the most salient characteristics of the system, which is its fragmentation, and the second part highlights the most relevant recent legislative reforms. The final part of this section discusses policy options relevant to the implementation phase of the new strategy for higher education in Bulgaria and to the challenges that emerged from the analysis presented in this section.



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## Provision of HE

**The HE sector in Bulgaria comprises 4 types of institutions:** universities, specialised higher schools, independent colleges, and research institutions such as the Bulgarian Academy of Science or the Agricultural Academy. [since they train for 3rd cycle of HE they are part of the HE sector] At present there are 51 HE Institutions (HEIs); 49 of these are universities or specialised higher schools (38 of which are public) and 3 are independent private colleges. Almost half of the Bulgarian HEIs (24) are concentrated in or near the capital of Bulgaria, Sofia.[2]

**Universities and higher schools offer programmes in the 3 cycles of HE – bachelor, master and doctoral level.** Bachelor programmes have a duration of 4 years, masters' degrees can be 1 or 2 years long, and doctoral studies can also be conducted in Research institutions. Medicine, Law, Pharmacy, Veterinary, Dentistry, Engineering and Architecture, are studied in the form of integrated Bachelor and Masters programmes (or "long degrees"). HEIs in Bulgaria also offer the degree of "Professional Bachelors", which has a duration of 3 years. Colleges only offer this kind of programmes.[3] Most HEIs organise, in addition, postgraduate programmes, which do not lead to an education or qualification degree.

**The HE system in Bulgaria is considered to be highly fragmented.** According to a European Commission (EC) study from 2018 that reviewed the research system in Bulgaria, Bulgaria has one of the EU's highest numbers of HE institutions compared to its population.[4] The study recommends university mergers and a clearer definition of the mission of different types of universities in terms of research or teaching focused. A rapid assessment of the average number of students per HEI in each of the regions of Bulgaria, however, suggests that the number of universities is not necessarily excessive in terms of the number of students enrolled. The average number of students ranges from 5,385 students per HEI in the North Central Region and 3,650 per HEI in the Southwest region, which contains the capital city, where more than 50 percent of the HEIs are located in the country. In the U.S.A., for instance, the average number of students per HEI in 2018 was 6,350.[5]

**Table 1: Students Enrolments and HEIs per region in Bulgaria, 2019 (numbers)**

| Region | Number of Students | Number of HEIs | Average student number per HEI |
|---|---|---|---|
| **Total** | **220,168** | **51** | **4,077.2** |
| South-Western | 5,339 | 1 | 5,339.0 |
| North Central | 26,925 | 5 | 5,385.0 |
| North-Eastern | 31,193 | 7 | 4,456.1 |
| South-Eastern | 13,133 | 3 | 4,377.7 |

[2] Bulgarian National institute of Statistics (NSI)

[3] Eurydice, Bulgaria – HE system. Online resource. https://eacea.ec.europa.eu/national-policies/eurydice/content/types-higher-education-institutions-12_en

[4] European Commission, *The research evaluation and performance-based funding system in Bulgaria* https://rio.jrc.ec.europa.eu/en/file/12400/download?token=wcgzyidE and ET Monitor 2018 Bulgaria, p. 8.

[5] Annual Survey conducted by U.S. News. Oct 1st 2019: https://www.usnews.com/education/best-colleges/the-short-list-college/articles/colleges-with-the-most-undergraduates



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| | | | |
|---|---|---|---|
| South-Western | 105,845 | 29 | 3,649.8 |
| South Central | 37,733 | 9 | 4,192.6 |

*Source: Bulgarian NSI*

**Decisions about mergers of HEIs require a close analysis of the populations these institutions serve and the fields in which they offer degrees.** In addition to efficiency aspects and the need to strengthen the research profile and international competitiveness of Bulgaria, ensuring that HE is widely accessible to different sectors of the population leads to an increased availability of highly skilled workforce and thus contributes to raise the competitiveness of the Bulgarian economy. HEIs can also be crucial for the economy and cultural environments of their regions. They can not only feed the labour market with graduates needed but also collaborate in research adequate for the local industry. They also support business development around university life and constitute a hub of events and activities that involves the broader community. In short, merger decisions require a detailed analysis of HEIs' actual students' profiles, programmatic offer, research specialization areas, and community impact.

**An alternative to institutional mergers can be the harmonization of the HE programmatic offer and the HEA requirement, set also in the new 2030 National Higher Education Strategy, to develop a map of the HE sector in Bulgaria can serve as the bases for this process.** In the past two decades the programmatic offer in HE has multiplied in Bulgaria with the objective of attracting students but sometimes without adequate staff capacity. A closer look at these increases since 2012 shows that they have concerned mostly degrees in Economics; Administration and Management and Pedagogy. In turn, the offer of masters programmes has grown more than in Bachelors programmes (Figure 3).

> *"In the past two decades the programmatic offer in HE has multiplied in Bulgaria with the objective of attracting students but sometimes without staff capacity."*

**While mapping the sector can help to identify gaps, overlaps and potential for further developments, a strengthened quality assurance (QA) system is the most central feature that can ensure both dynamism and quality of the sector's programmatic offer.** Initiatives to harmonize the current programmatic offer requires, as in the case of mergers considerations, assessing the types of degrees and areas of research in which HEIs are specialised vis-à-vis regional realities. These assessments should take into account that while the creation of new study programmes and incursions in new fields may have resulted in quality deficiencies, it is also a form of a dynamic system that can adapt to changes in the labour market and in students' population size and preferences. An adequate QA system ensures that HEIs have the capacities to run programmes or open new study fields.

**Striking the right balance between quality and relevance while ensuring that the system remains flexible and attractive, as well as accessible, to diverse students' profiles is a critical challenge in any effort to harmonize the HE programmatic offer.** Options such as enhancing and expanding current alliances and joint-actions across Bulgarian universities or strengthening quality assurance



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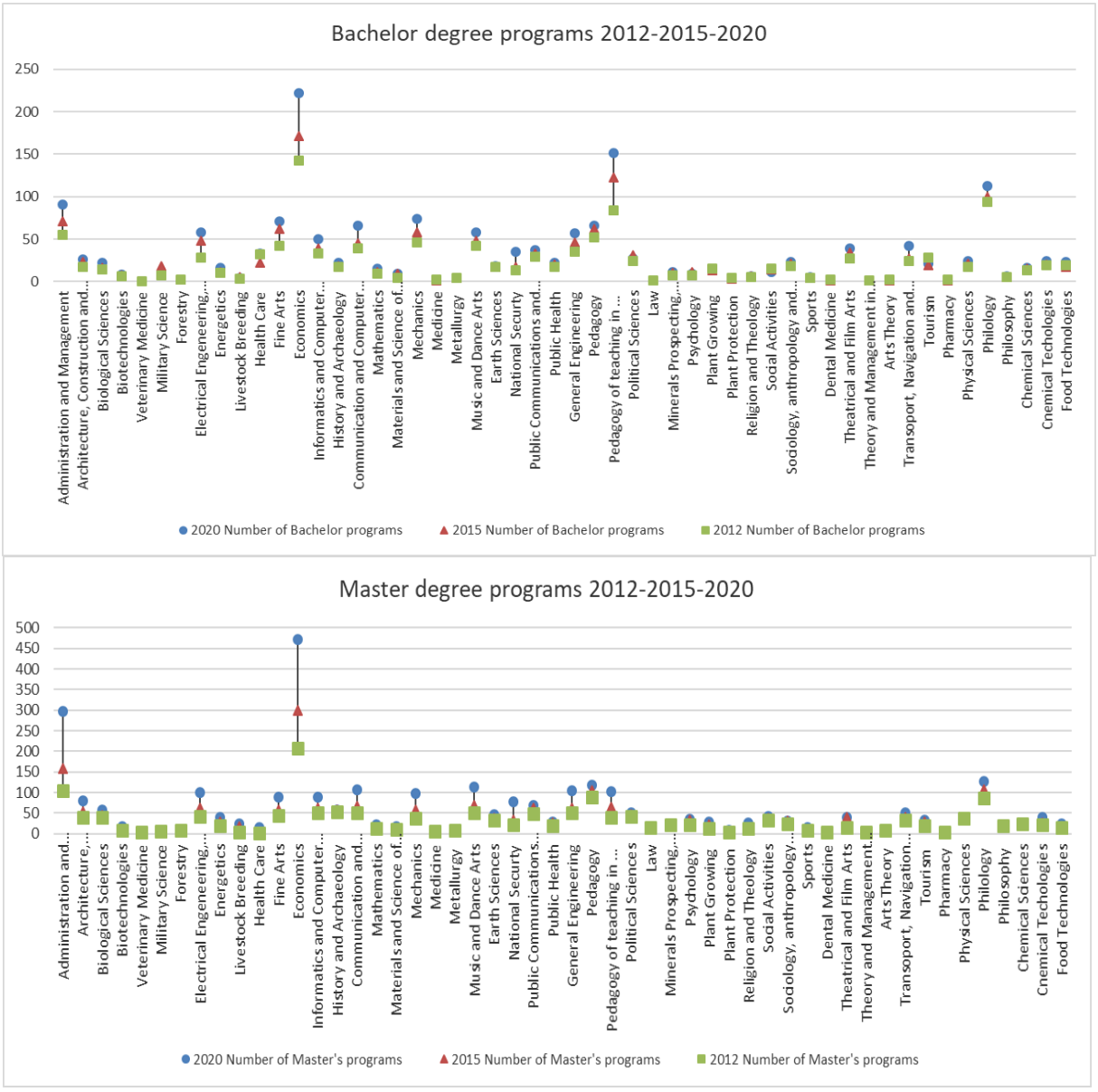
and support for quality enhancement could help to lead a process of harmonization that reaches an adequate balance across these different factors.

**Figure 3. Increase in HE study programmes offered from 2012 to 2020**




*Source: World Bank authors' calculations with data from BURS*

**The admissions system to HE in Bulgaria is based on the secondary exit exam GPA and in some universities and programmes there are also entry exams.** Students who want to continue their education at a HE institution have to pass successfully two compulsory matriculation exams in order to receive a diploma. One of them is in Bulgarian Language and Literature, and students choose the other one from the curricula.[6] Some universities have their own entry exams additionally as in the

[6] Eurydice, Assessment in General Upper Secondary Education in Bulgaria. https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-general-upper-secondary-education-8_en



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cases of Medicine and Pharmacy studies, for example. Most HEIs, however, accept students based on their marks in the Matriculation exam. In the 2019/2020 academic year the highest average secondary education GPAs corresponded to students that entered "Medicine" programmes (5,63), while students in "Metallurgy" were accepted with the lowest average secondary education GPA (4,38).[7]

**Most HEIs in Bulgaria offer three modes of enrolment – regular (full-time), extra-mural (part-time), and distance.** Table 2 shows that the large majority of vacancies in Bulgarian public HEIs approved by the government each year are full time in all types of degrees. Instead, places approved for private HEIs have a higher share of part-time or distance learning places. More than 90 percent of all HEIs provide extra-mural (part-time) teaching and distance learning is available in approximately a quarter of the institutions.[8]

**In recent years there have been some variation in the share of HE places approved by the government for more flexible forms of learning.** There has been an increase in the share of part-time places approved for masters' degrees in public HEIs – from 16.2 percent of the places approved for all modes of delivery in 2017 to 20.4 percent in 2019. The share of places for distance learning in private HEIs also increased in the same period of time for all degree types. These trends may reflect an intention to offer more flexible modes of learning while considering differences in these types of institutions in terms of physical and human resources.

**Table 2: Distribution of HE places allocated by mode of enrolment**

| Type of Degree | Mode of Enrolment | Private HEI | | | State HEI | | |
|---|---|---|---|---|---|---|---|
| | | 2019/ 2020 | 2018/ 2019 | 2017/ 2018 | 2019/ 2020 | 2018/ 2019 | 2017/ 2018 |
| Professional bachelor | Full time | 44,3% | 50,2% | 45,6% | 95,7% | 96,1% | 97,1% |
| | Part-time | 55,7% | 49,8% | 54,4% | 4,3% | 3,9% | 2,9% |
| Bachelor | Full time | 50,3% | 51,0% | 56,2% | 83,2% | 83,1% | 82,2% |
| | Part-time | 29,3% | 31,5% | 30,5% | 15,3% | 15,4% | 15,9% |
| | Distance | 20,3% | 17,5% | 13,3% | 1,5% | 1,6% | 1,9% |
| Integrated BA+MA (5 years) | Full time | 62,3% | 60,7% | 51,1% | 94,8% | 94,7% | 94,6% |
| | Part-time | 37,7% | 39,3% | 48,9% | 5,2% | 5,3% | 5,4% |
| Masters | Full time | 31,3% | 38,4% | 30,8% | 79,3% | 79,5% | 83,5% |

[7] Ranking system 2019: Decreased number of students; better career realization of graduates**. "News"** 05.12.2019. https://osis.bg/?p=3406&lang=en

[8] Boyadjieva P., Ilieva-Trichkova P. (2018) HE Systems and Institutions, Bulgaria. In: Teixeira P., Shin J. (eds) Encyclopedia of International HE Systems and Institutions. Springer, Dordrecht.



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| | | | | | | |
|---|---|---|---|---|---|---|
| Part-time | 49,0% | 43,3% | 53,4% | 20,4% | 20,0% | 16,2% |
| Distance | 19,7% | 18,3% | 15,9% | 0,4% | 0,5% | 0,3% |

*Source: https://www.mon.bg/bg/1775, http://www.strategy.bg/publicconsultations/View.aspx?lang=bg-BG&Id=5062, http://www.strategy.bg/PublicConsultations/View.aspx?lang=bg-BG&Id=4227*
*Decision for approval of the number of students admitted to study in the public and private universities in Bulgaria, Annex 1, 2 and 3, own calculations.*

## National strategic and policy framework

**The HE Act, from 1995, regulates the HE sector in Bulgaria.** The most recent amendments were made in 2016 and 2020. In 2016 the amendments regarded, for instance, the permission given to higher schools to admit applicants without any entrance examination provided that the applicants have successfully passed the state matriculation exams. These amendments included also the adoption of a list of protected specialties and priority professional fields to be considered in intakes. In 2020 the amendments regarded the governance of HEIs, for instance it established that the HEIs Council of Trustees required having a representative from the relevant municipality. It also granted this Council the right to participate in academic councils with an advisory vote. A number of additional amendments regard accreditation procedures and the alignment of HE with the labour market. More details on these are provided below in the corresponding sections.

**The HE Act sets the framework for the entire HE sector including private institutions, but the state has less rights to intervene in the definition of strategic priorities of the latter.** According to the Act, for instance, regarding private universities the state ensures that they have the right of ownership or right of use over the real estate used for the conduct of the education and their establishment needs the approval of the National Evaluation and Accreditation Agency in Bulgaria. Yet, government policy priorities and strategies can only be mainstreamed in public HEIs. For example, the system of priority professional fields whereby HEI and students receive financial incentives to enrol in these defined fields cannot be implemented in private HEIs.

**The Development of the Academic Staff Act regulates the procedures for the acquiring of scientific degrees and the holding academic positions in the Republic of Bulgaria.** It was promulgated in 2010 and its latest amendments were introduced in 2020. Prior to that, in 2018, a key change was introduced establishing that the awarding of the academic position of "Professor" had to be based on internal competitive processes. The scientific jury responsible for the selection should be composed of seven members of which at least four must be Professors and at least three external to the institution. The Act also establishes the need for academic staff to engage actively in research activities and production.

**Additional relevant legislation includes the Classifier of the Fields of Higher Education and Professional Fields and the National Qualifications Framework (NQF).** The Government Decree on the Classifier, from 2002, establishes the different fields of study in which HEIs offer programmes. It is used for the assessment and organisation of various procedures, including the decision on enrolment places that the state subsidises and external QA assessments by programmes. The National Qualifications Framework was adopted by a Decision of the Council of Ministers in 2012 and is in continuous development and update. It defines, in terms of learning outcomes (described as knowledge, skills and competences), what a given degree needs to provide to its graduates for the



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exercise of different professions. It helps to ease transitions across the system and also into the labour market as its descriptors are to be used in the design of HE programmes**.**

> *"… the development of an implementation plan would benefit from further analyzes of why some of the objectives and targets set in the strategy currently in place have not been achieved."*

**Six strategic documents have been guiding policymaking and implementation in the HE subsector in the past few years.** These include the National Strategy for the Development of Higher Education – SDHE (2014-2020) – for which an Action Plan was developed – the National Strategy for Lifelong Learning, and the National strategy for the Development of Scientific Research in the Republic Bulgaria 2017-2030.

Three new strategies are in the final phases of preparation or have been recently adopted. The first is the National Development Programme "Bulgaria 2030", the second one is the new National Strategy of Education (2021-2030) and, third, the new Strategy for HE (2021-2030) that follows on the pending issues and new challenges emerged since the launching of the strategy currently in place.

**Both the previous (2014-2020) and the recently adopted strategies on HE (2021-2030) identify the most outstanding challenges in the sector.** They propose an adequate set of actions to address them. However, the development of an implementation plan would benefit from further analyses of why some of the objectives and targets set in the strategy currently in place have not been achieved. This could help to assess if there are specific areas that are not contributing to the adequate implementation of those actions and if alternative approaches to address the identified concerns may be needed.

**The most salient measures adopted since the launching of SDHE 2014-2021 that have been identified are listed below.** More details on each of these measures are provided in the corresponding sections of this report:

- Introduction of protected specialties and priority professional fields with which enrolments should align.
- Redefinition of the role of HEIs in the research landscape of the country.
- Introduction of performance based funding (linked to some extent to the above).
- Creation of centres of excellence for research in HEIs, financed by EU-European Social and Investment Funds (ESIF) 2014-2020 under the Bulgarian Operational Programme for Education, Science and Smart Growth (OPSESG).
- Introduction of scholarships and internships schemes also financed by EU-ESIF 2014-2020.

### *Key challenges and policy option recommendations for the system of HE provision and strategic action planning*

***Challenge 1: to address the fragmentation of the system keeping a balance between quality and flexibility so the system can adapt to changes in the contexts and in students' preferences.***



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It concerns the operationalization of the current policy priority regarding the Mapping of the HE programmatic offer.

*Policy options*

- The **mapping** could be based on information held by the National Evaluation and Accreditation Agency in HE (NEAA) which is responsible for accrediting all HEIs and their programmes and data collected and processed by the Bulgarian Universities Ranking System (BURS).
- The results of the mapping could constitute an information tool for prospective students and be made complementary to the information on programmes characteristics included in BURS. A geo-referenced map could help to have a clearer understanding of the offer across the country. Box 1 presents the case of the geo-referenced map of the programmatic offer in Higher Education in Argentina – a vast territory where this offer also grew exponentially in the past decades.
- For the purposes of harmonization, the programmatic offer the mapping should be complemented with regional development information and students' profile data.
- To support and foster alliances and joint actions across Bulgarian universities. The alliances could follow the example of the European Universities initiative format and require that member HEIs possess different levels of expertise in the relevant field(s) in which they collaborate. This can create opportunities for raising standards by sharing different types of academic experiences.
- To focus on providing support for quality assurance and enhancement which may include a focus on hiring talented staff or up-skilling the current staff in either pedagogical preparation or research-related development.
- To put students at the centre in policy design and strategic decision-making since their engagement and diversity of profiles is essential to ensure quality and relevance of their learning outcomes.
- To assess the specific contributions of the HEI and the programmes they offer to the regional economic and cultural life

***Challenge 2: To ensure that strategic action planning builds on lessons learnt***

It involves ensuring an efficient use of resources – both material and human in subsequent efforts to improve access, quality and relevance of HE in the country.

*Policy options*

- An **assessment of results** achieved in relation to the actions and objectives set out in the 2014-2020 strategy.
- A detailed systematic analysis of the internal consistency across vision, objectives, priorities and actions proposed in the strategy under development to ensure the implementation measures designed contribute to achieve the objectives and targets set in the strategy.
- The use of theories of change is recommended for the process of planning measures and interventions.
- Conducting in-depth interviews and focus groups to brainstorm and consult measures and initiatives is recommended.



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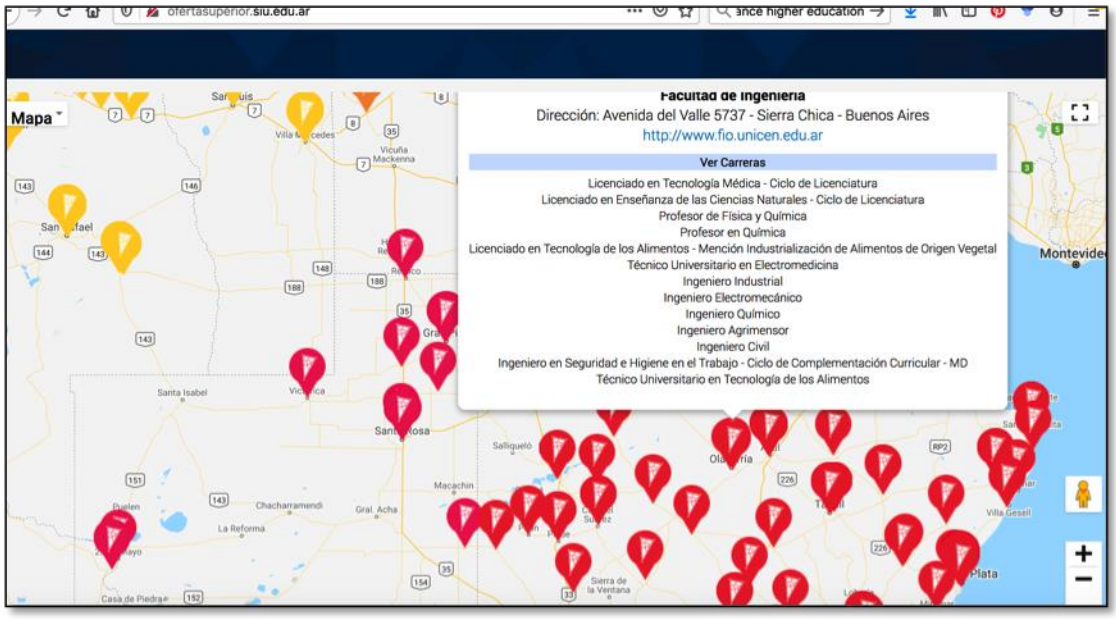
**Box 1. A geo-referenced map of the programmatic offer in HE, Argentina**

The HE system in Argentina witnessed a significant growth in terms of number of institutions, programme offers and students since the return to democratic rule in the early 1980s. At present 2million students are enrolled in HE, in all different types of degrees and in private and public HEIs.

There are currently 131 HEIs in the country, almost half of them are private and the other half is public, although public universities are significantly bigger in reach and students enrolments.

These HEIs offer, altogether, 12,032 study programmes in total, 4,000 of which are post-graduate programmes (equivalent to ISCED 7 or above).

In order to help prospective students, know better the offers in their geographical areas and beyond, the Department responsible for the System of University Information at the Ministry of Education developed a geo-referenced map of this vast offer. The map includes all types of HEIs (indicated by different colours in the map) and information for each of them presents the Departments or Faculties and the degrees offered in each department.




*Sources: https://www.argentina.gob.ar/sites/default/files/sintesis_2016-2017.pdf and http://ofertasuperior.siu.edu.ar/*



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# Access, completion and equity

**This section looks first at the current trends in HE participation and then focuses on access and equity aspects.** The section shows that numbers of enrolments in HE decreased significantly in the country and even if high migration means that net enrolments rates remain at adequate levels, the number of HE graduates still may be insufficient for the increasing demand for higher skills in an economy that seeks to become more competitive. Subsequently, therefore, the section explores different avenues through which participation in HE can be extended to include sectors that are less represented in the HE student population. Their incorporation can have not only personal and communal benefits, but also can constitute a form of rising the skills and educational attainment levels of the labour force.

## Trends in participation in HE in Bulgaria

**Participation in tertiary education in Bulgaria has been decreasing since 2012 in absolute numbers.** This may be the result of demographic trends, including the increasing numbers of Bulgarians that study abroad or of the introduction of measures to limit the entrance to programmes for which there is low demand in the labour market[9], which is probably linked to the introduction of the protected specialties and priority professional fields mentioned earlier. Between 2012 and 2017 the number of enrolments in tertiary education decreased by 12.3 percent, from 284,995 to 249,937 (Fig. 4).

**Enrolments are decreasing in all 3 cycles in Bulgaria, though more markedly in the first cycle.** From 2014 to 2018 there was a 19 percent decrease in enrolments for the first cycle (Figure 5). The decrease in masters' degree enrolments was slightly less, minus 13 percent. Enrolments in doctoral studies increased overall in that period, but they grew mostly from 2014 to 2017 – from 6,055 to 6,738 – to then decline to 6,440 students in 2019, below 2015 levels.[10] Overall, however, the distribution of enrolments in tertiary education across the three cycles is in line with EU (Figure 6) and the recent increases in doctoral students seem to be leading to a more similar pattern even.

**The Professional Bachelor degree type is also losing enrolments.** In 2014, there were 15,244 students enrolled in this type of programmes. That figure decreased to 8,233 in 2019.[11] According to data by the National Statistical Institute, there is a drop in the number of students enrolled in a "professional bachelor" degree between 2014/2015 and 2015/2016 due to a restructuring of three colleges that have become specialised higher schools offering more majors in "Bachelor" degree than before. The enrolment rates in this degree are stable (as a proportion of all the degrees obtained).

[9] Education and Training Monitor Report 2019, Bulgaria, p 7.
[10] World Bank, Edustats and Bulgarian NSI.
[11] Bulgarian NSI: https://www.nsi.bg/en/content/4897/students-educational-qualification-degree-and-narrow-field-education



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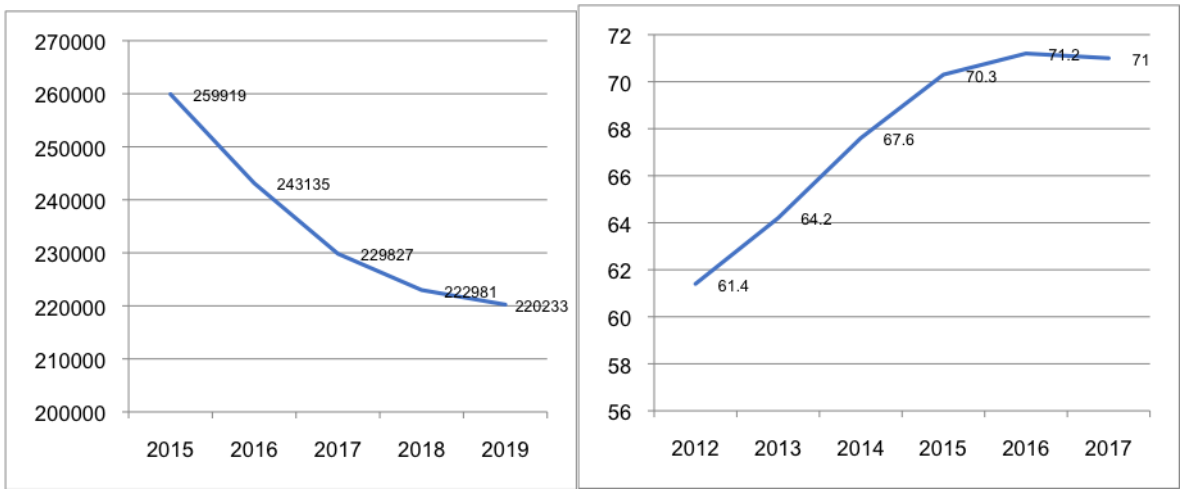
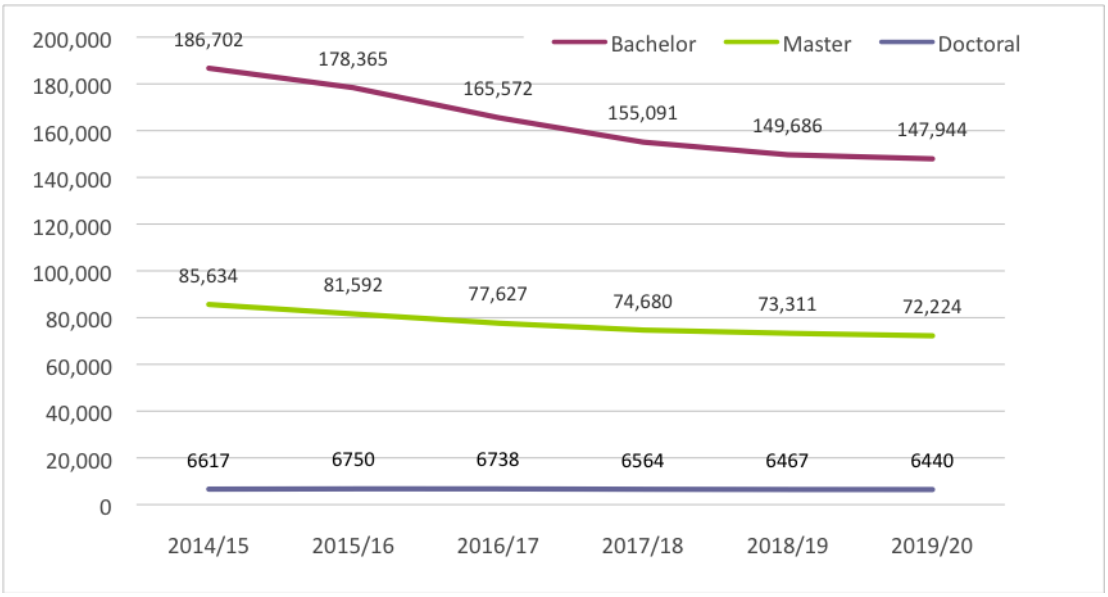
**Figure 4. Evolution of enrolments and Gross Enrolment Rates (GER) in HE (numbers and %)**




*Source: NSI*

**Figure 5. Evolution of students' enrolments in HE in Bulgaria by cycle of study**




*Source: NSI*



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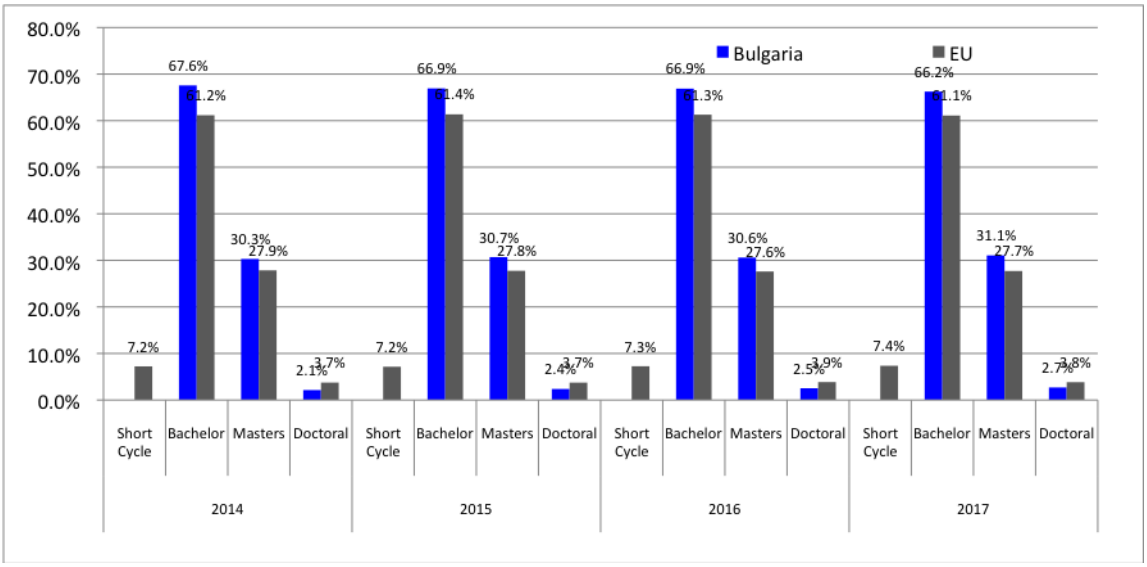
**Figure 6. Enrolments by cycle of study, evolution Bulgaria and EU-27 average**




*Source: World Bank, EdStats*

**At the same time, partly due to the demographic dynamics affecting the country, there is a continued trend of increase in the enrolment rate.** From 2012 to 2017 the share of tertiary education students in the total population of the age group of tertiary level education (18-24 in Bulgaria) – i.e. the Gross Enrolment Rate (GER) – has increased by almost 10 percentage points (Figure 7). A look at the age composition of students enrolled at that level of education suggests that in Bulgaria this is not a consequence of those lagging behind in the completion of their studies.[12]

**The gross enrolment rate of Bulgaria at present does not emerge as excessive when compared with the rest of the EU.** It is just above the EU average and close to countries with very solidly established tertiary education systems such as Germany (Fig. 7). Bulgaria, indeed, is the EU member state that is exactly in the middle of the wide range of variations of GER in all the member states. If the GER remains stable or grows it means that Bulgaria will be in the position to achieve a share of the population with HE degrees more in line with the rest of the EU.

[12] Data for 2018 on tertiary enrolments in ISCED levels 5 to 8 (Bachelors, Masters and Doctoral studies), show that in Bulgaria 9.1 percent of those aged 26 were enrolled in tertiary education that year, 6.3 percent of those aged 28 years old, and 4.3 percent of those aged between 30 and 34. Among those aged 35-39, 3 percent were enrolled in this level of education in Bulgaria. *Source: Eurostat*



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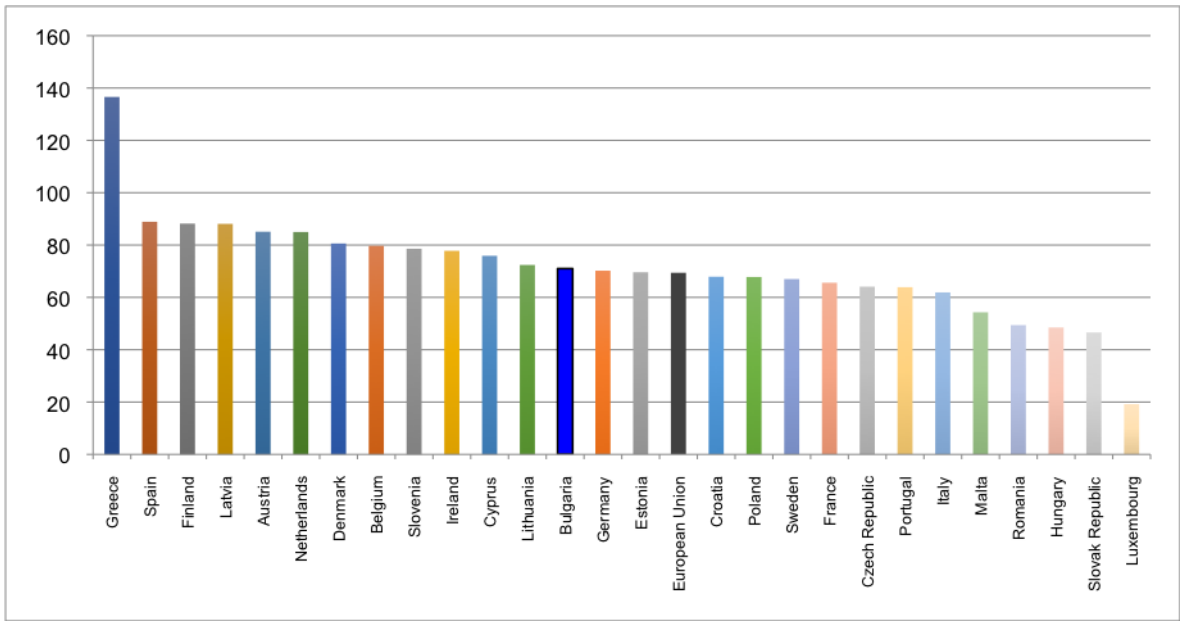
**Figure 7. Gross enrolment ratio in tertiary education, 2017**




*Source: World Bank, EdStats*

**The national Strategy for HE adopted in 2015 set out a target for educational attainment of 30-34 years old that has not been attained yet** (the target is set as specific target 5.1 in the Strategy, p. 26 of the English version). As of 2019, the share in the population of 30-34 years that holds a tertiary degree is still below 33 percent, whereas the target set for 2020 was 36 percent. It is highly unlikely that the set target of 36 percent will have been achieved in 2020 This means that Bulgaria still has the third lowest share of people with high level of education in the country. Only Romania and Italy have smaller shares (Figure 8). Only six other EU countries do not seem to be going to achieve their national targets by 2020 – Luxemburg, Ireland, France, Portugal, Germany, and Croatia.

**Bulgaria seemed on the right path to reach that target since the population with tertiary education attainment had been growing since 2012 at a good pace.** Yet, no improvements were registered after 2016 and last year the values returned very close to 2015 levels, which stood at 32.1 percent (Figure 9). While the gap seemed to be narrowing between Bulgaria and the EU average by 2013, currently the gap is as wide as it was in 2012, accounting for 9.1 percentage points of difference again.



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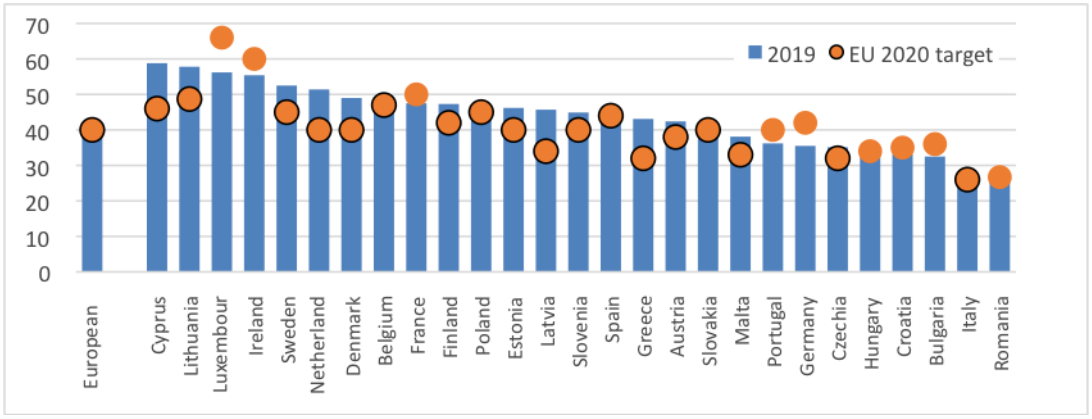
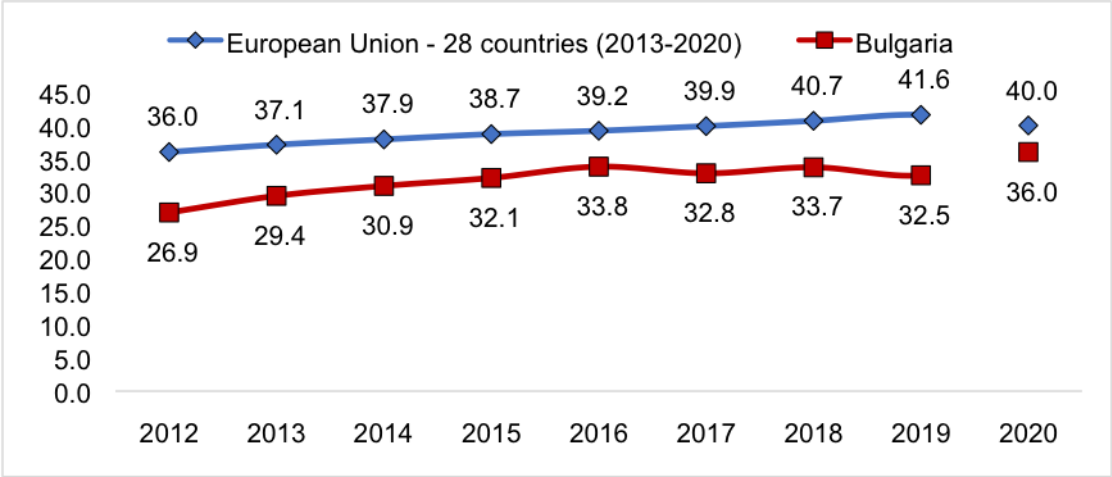
**Figure 8. Tertiary educational attainment in EU, age group 30-34, 2019**




*Source: Eurostat*

**Figure 9. Share of tertiary graduates among the 30-35 years old population, including 2020 EU and national targets**




*Source: Eurostat*

**Understanding the factors that led to a halt in the progress towards achieving this 2020 target requires future research into barriers to access, progress and completion of tertiary education in Bulgaria.** Part of the explanation of the insufficient progress towards this target can be found in the very definition of the age group considered in the target – those aged 30 to 34. This means that the first graduates that left university in the time period covered by the SDHE were theoretically about 24 in 2014 and that they will be part of the age groups defined in the target only in 2020.

**Furthermore, if enrolment rates continued to increase since 2014 and completion rates are adequate, the target of 2020 could be achieved with two or three years of delay.** But this also suggests that little progress was made in creating lifelong learning opportunities in HEIs for those beyond the theoretical age in this level of education. This means that opportunities for adults to upskill and lift their education level for their benefit and for the overall society were missed.



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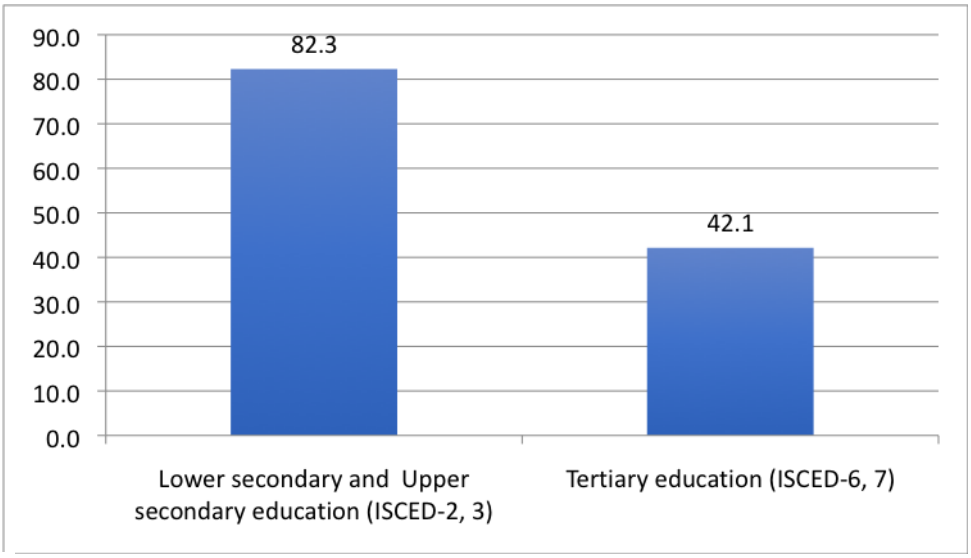
**Hence, a number of additional aspects must be taken into consideration to explain not only the insufficient progress towards the 2020 target but also the general contraction in tertiary students' numbers**. Demographic factors need to be analyzed vis-à-vis other factors that may be closing down opportunities for access to HE. Exploring these factors could contribute to unlock the potential of the Bulgarian population to raise overall its skills levels and thus contribute to their own welfare and national competitiveness. Some explanations identified point to the introduction of quotas to limit enrolments in specialties with lower employment prospects, as mentioned above. But also, attention should be paid to the underrepresentation of some social groups in tertiary education participation, like the low enrolment of people from disadvantaged backgrounds or marked gender imbalances by fields of study which are explored below.

**Data available show that enrolment levels drop from secondary school to higher education, yet this cannot be attributed solely to barriers at entry to HE.** In the 2019/2020 academic year, 82 percent of those of lower and upper secondary age education were enrolled in these levels of education while only 42 percent of the relevant age group for higher education were enrolled in these level of studies in 2019/2020 (Fig. 10). Thus, enrolment in higher education decreases by more than a half when compared to the previous level of education. This decrease is not all due to the barriers at entry since many secondary students leave education before completing their degrees or chooses to not take the matriculation exam at the end of their secondary studies. In addition, in the past ten years secondary school graduates have increasingly chosen to pursue their HE studies abroad.

**Figure 10. Net enrolment rates in secondary and higher education in Bulgaria, 2019/2020**




*Source: NSI*

**In Bulgaria every year the government determines the number of vacancies that there will be available for each public university per professional field and specialties from the regulated professions.** This number allows for the public HE system to absorb most of secondary graduates for



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each year. For instance, for the academic year 2019-2020, 47,403 students out of 48,582 that sit the matriculation exam passed it. The state approved for that year 41,170 places in public universities – including for state-funded (33,477) and self-funded (7,693) students. Thus almost every secondary school graduate has the possibility to access higher education disregarding of his or her grades in the matriculation exam. In fact, the admission to HE of students with very low performance in their national matriculation exam is a concern that features prominently in the news in Bulgaria every year. And yet, most years not all the places made available are filled. In the 2019-2020 period, 3729 places remained vacant. Most of the unfilled places correspond to those approved for fee-paying students.[13]

**The matriculation exam's grades determine, however, which public universities or degrees candidates can access.** This is so because the universities that receive more applications than the places they have had approval for will select candidates on the bases of those grades. Students who fare less well in the national matriculation exams due to low quality of pre-university education in their local schools, for instance, will have less chances to access the most sought after degrees or universities. This may be closing access to otherwise talented individuals. The reduction of university places in professional fields more popular but with lower employment prospects according to government forecast analyses, as expressed in the definition of priority fields, may further contribute to excluding these sectors from HE.

**The COVID-19 pandemic affected entry into HE for the 2020/2021 academic year.** The number of applicants for university entry for 2020/2021 increased compared to previous years. This may be the result of reconsiderations about studying abroad, which for several years had been the option of many secondary graduates[14]. The uncertainties associated with the pandemic context, including travel restrictions to and the characteristics of study experience, may have made the option of remaining in Bulgaria to study appear as the most sensible choice. In fact, while in previous years the rate of acceptance in relation to applicants was 1:1, for the current academic year this was more restricted rising to 1:8.

**At the same time, the leading universities in Bulgaria had planned lifting entry exams for almost all specialties except for subjects such as medicine or pharmacy.** This decision could have had some equalizing effects since private tutoring is the main tool for candidates to prepare for the most competitive university exams. Without entry exams, therefore, lower socio-economic groups could have had more chances to access those specialties. Differences in quality of pre-university education, however, still may be reflected in the national matriculation exams and thus may be precluding these equalising effects, especially in the case of increased competition for places.

> *"In 2015 only 1.8 percent of HE students in Bulgaria were from families whose parents had low level of education."*

**A better understanding of the effects of the pandemic on entry and other aspects of HE in Bulgaria is still needed.** These analyses should also inform decisions on how to implement the actions set out

[13] MES Number of students admitted to study in public and private universities
[14] In 2017, 8.1% of upper secondary graduates in Bulgaria had finalized tertiary education abroad. European Commission, Education and Training Monitor 2019, Bulgaria; p. 7.



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in the newly adopted NHES2030 and the planning of the interventions to be funded with ESIF Operational Programme for the 2021-2027 period.

**Bulgaria is the country of the European HE Area (EHEA) where those from the most socially disadvantaged sectors are the least represented in its HE student population.** In 2015 only 1.8 percent of HE students in Bulgaria were from families whose parents had low level of education (less than lower secondary). The majority of students came from families whose level of education was medium (up to upper secondary or tertiary non-university education) and 46.5 percent from parents with high levels of education.[15] But more strikingly is how distant this share in the participation in HE is from the share of those aged 45-64 (a proxy for the parents' population of those in tertiary education age) with low levels of education in Bulgaria.[16] This share is 18 percent in the total population of that age, which means that this population's sons and daughters representation in HE is ten times below than what it should be.

**There is also a level of gender imbalance in participation in tertiary education, especially by fields of study.** Around about 54 percent of the students enrolled were women in the years between 2012 and 2017 (Figure 11). While this is in line with the share of female in tertiary enrolments in the EU on average, there are significant gender imbalances in particular fields. Data on graduates by field of study show that men are highly overrepresented in engineering related degrees (Figure 12). In Education and Health women are overrepresented. In addition, as shown in Figure 13, women are also overrepresented in masters' degree programmes.

**While these patterns of gender imbalance are in line with other EU countries, the fields of study in which gender imbalances are higher correspond with the list of priority professional fields that the government defined on the bases of forecasted labour market needs.** Efforts to address these imbalances, therefore, may not just contribute to widen participation but also could prove crucial to achieve the expectations of the government in terms of increasing the number of graduates in these fields. Looking more into the factors underpinning these imbalances, such as understanding why different sexes enrol in these fields or what are the additional socio-economic characteristics that can be shaping individuals' choices, could lead to policy ideas to address it.

[15] Only 5 other countries in the EHEA had lower shares than Bulgaria – the Baltic countries, with 0.8 percent each; Czechia with 0.9 percent; Slovakia with 1.3; and Poland with 1.7 percent.

[16] European Commission/EACEA/Eurydice (2018). *The European HE Area in 2018: Bologna Process Implementation Report.* Luxembourg: Publications Office of the European Union, p. 156-57.



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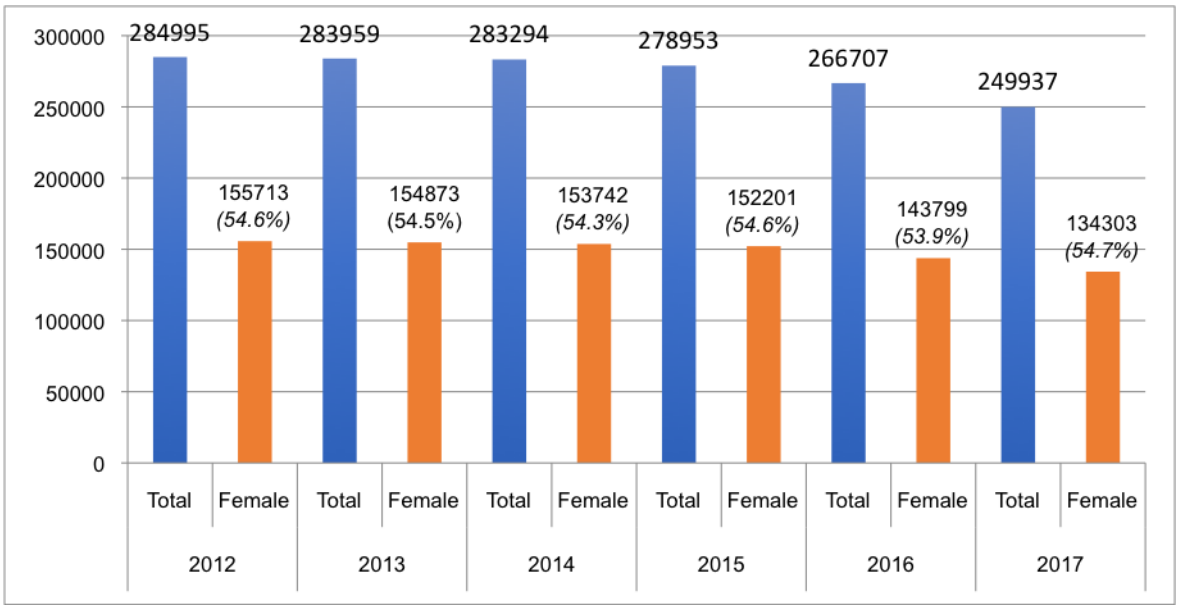
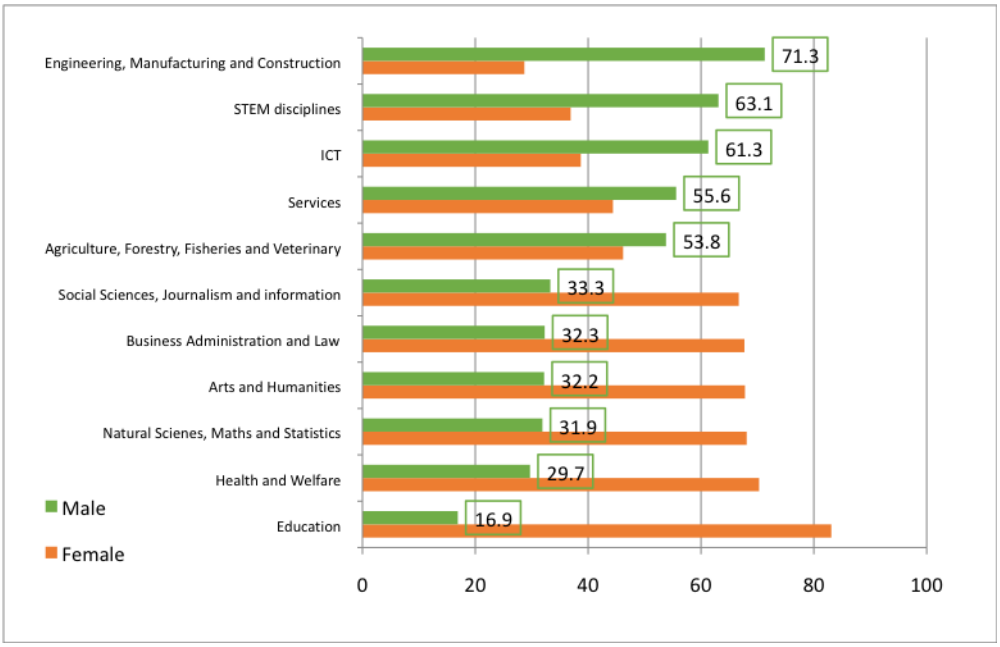
**Figure 11. Number of enrolments in tertiary education in Bulgaria and female enrolment in numbers and percentage 2017**




*Source: World Bank authors based on World Bank EdStats data.*

**Figure 12. Tertiary graduates by field and sex, 2017**




*Source: World Bank, EduStats*



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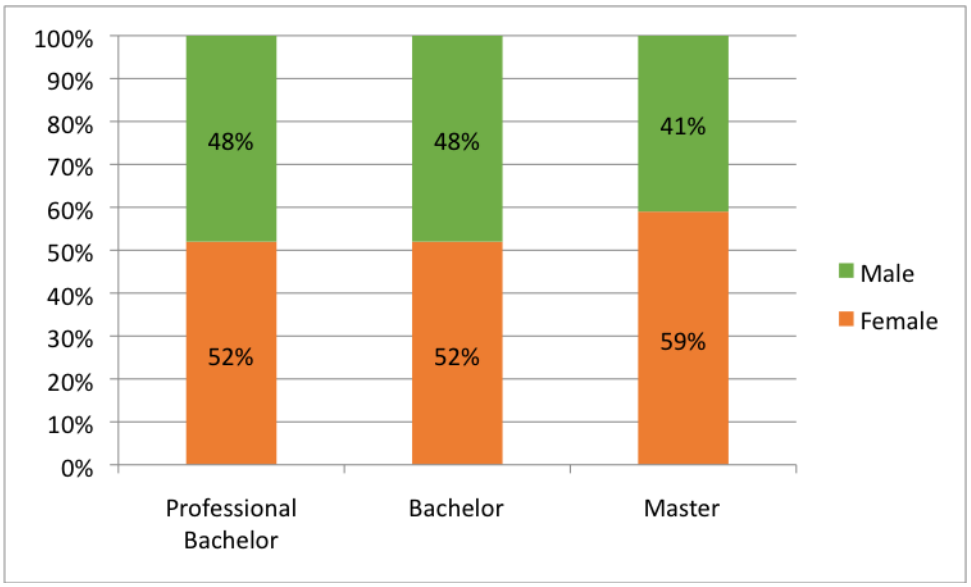
**Figure 13. Distribution of enrolments in different HE cycles by sex, 2019**




*Source: World Bank author's calculations based on NSI data*

**The participation in HE of adults aged 30 or above in Bulgaria is low.** In 2014, 13 percent of those enrolled in HE were "mature" students. This was below the EHEA average for that year, which was 15.7 but also represented a decline from 2012 when those in that group aged were 18.3 of the HE students' population. This decrease of 5.3 percentage points was the fourth highest decrease among EHEA countries, after Andorra, Cyprus and Turkey.[17] Data for 2018 indicate that only 3 percent of those aged 30-34 are enrolled in any form of HE studies.[18] Increasing opportunities for non-traditional learners can be critical to raise the educational attainment and skills level of the working force in the country.

**There is an important gap between the EU and Bulgaria in the share of the adult population that holds higher education degrees.** This goes beyond the age groups considered in the target set for 2020 and it affects mostly those aged between 35 and 44 years old. As Figure 14 shows, in the EU on average 39 percent of that age group holds a tertiary education degree, whereas in Bulgaria that share is 9 percentage points below. In the EU those born ager the mid-1970s increased their level of education attainment compared to their previous generations at a faster rate than those in Bulgaria did so. One option to close that gap in high skill levels of these young to middle-aged adults is to facilitate their entry or return to HE and support them to complete their degrees.

> *"Increasing opportunities for non-traditional learners can be critical to raise the educational attainment and skills levels of the working force in the country."*

[17] European Commission/EACEA/Eurydice (2018*). (ibid)*
[18] Eurostat



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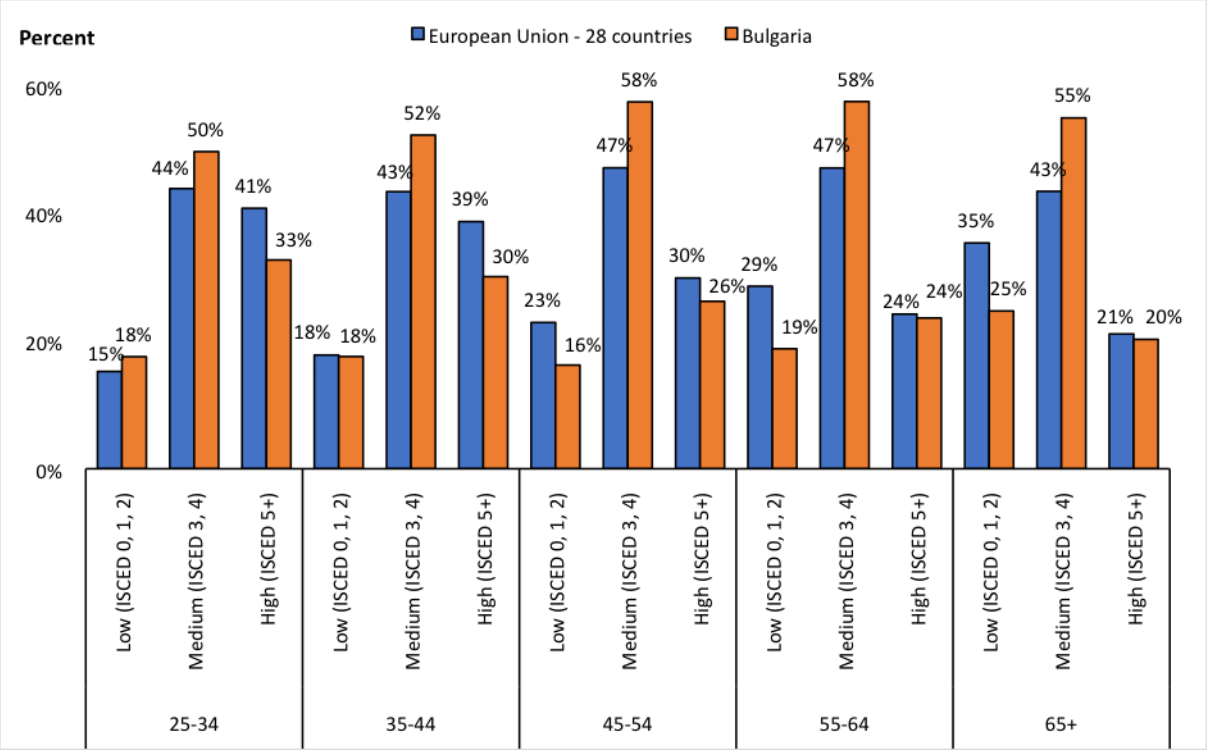
**Figure 14. Population by Age and Educational Attainment Level in Bulgaria and EU, 2019 (Percent)**




*Source: Eurostat*

**The distribution of enrolments by statistical regions in Bulgaria seems to reflect the geographical distribution of HEIs across the country.** Almost half of the enrolments (49 percent) are in the Southwest region (Yugozapaden) where more than 50 percent of the HEIs are located, as shown in the overview section above). This is an initial aspect to take into consideration in the mapping of the HE sector referred to also in the overview section. These institutions may be essential to ensure access to sectors of the population that for economic or cultural reasons are less prone to move to different parts of the country to purse their HE studies. An adequate understanding of the profiles and needs of the students attending these HEIs is crucial to ensure that decisions aimed at improving efficiency and quality also do not affect negatively equity and social inclusion in the sector.



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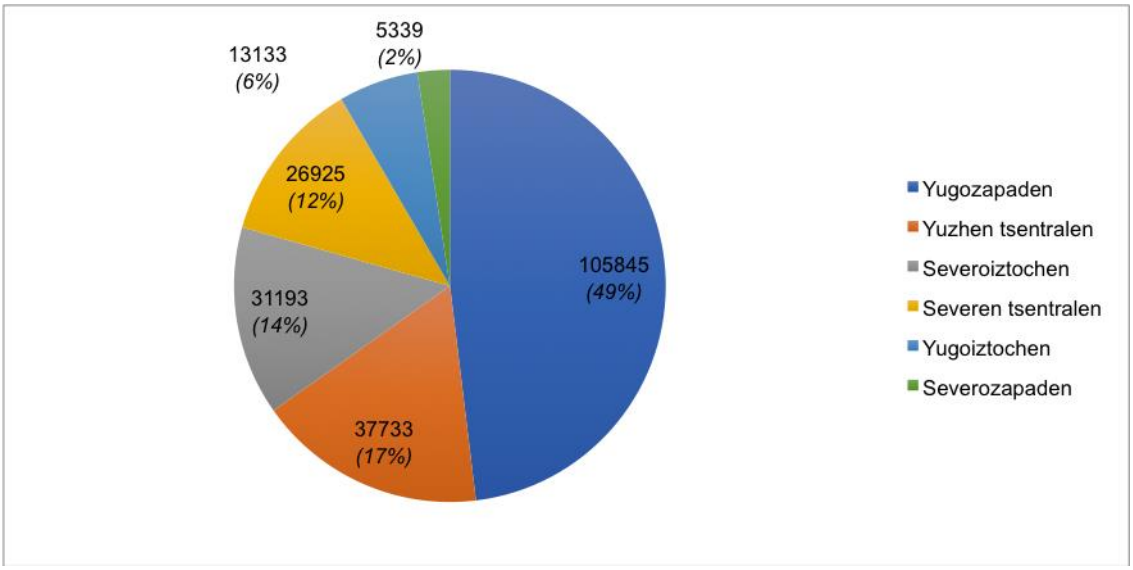
**Figure 15. Distribution of enrolments by statistical region of Bulgaria**




*Source: WB Authors calculations based on Bulgarian NSI data*

**Patterns and trends in enrolments by mode of attendance can be an indication of diversity of the student profiles.** An indication that students' needs and priorities may be changing is that while most students regular (full-time) programmes, the number of students enrolled in distance learning increased by 67.2% between 2006 and 2015[19]. Yet, a small proportion still enrolled in distance mode until last year. Data for 2019 show that only 4.3 percent of all HE students in Bulgaria were enrolled in this mode of delivery.[20]

**The share of enrolments in part-time and distance learning modes are higher in private HEIs.** This mirrors directly the higher share of places approved by the government for these modes of enrolments in private HEI as shown in Table 2 earlier (Figure 16). Given the different profiles that appear to be less represented in HE in Bulgaria – those from lower socio-cultural backgrounds, women and men in different study fields, and mature students, as indicated above – and the need to increase the pool of high skills labour force in the country, offering more courses designed to be delivered on part-time or distance basis could be a way to offer more opportunities for these different profiles to participate in HE. Curricula that are designed with a part-time format can ensure quality and efficiency of HE also for those that cannot attend all classes regularly.

**Furthermore, in a post-pandemic scenario, decision about mode of enrolment and delivery will be of central importance.** A careful analysis of changing trends in terms of modes of delivery triggered by the pandemic is needed to ensure that the lessons learned regarding distance learning can be capitalised for the benefit of making the system more flexible and open to diverse students. The rapid transition to online learning has contributed to the development of capacities in terms of teaching resources and pedagogical approaches but has also exposed pending needs and

[19] Boyadjieva P., Ilieva-Trichkova P. (2018) Higher Education Systems and Institutions, Bulgaria. In: Teixeira P., Shin J. (eds) Encyclopedia of International Higher Education Systems and Institutions. Springer, Dordrecht.
[20] WB authors' calculations based on NSI data: https://www.nsi.bg/en/content/4895/students-educational-qualification-degree-citizenship-mode-attendance-and-sex-higher



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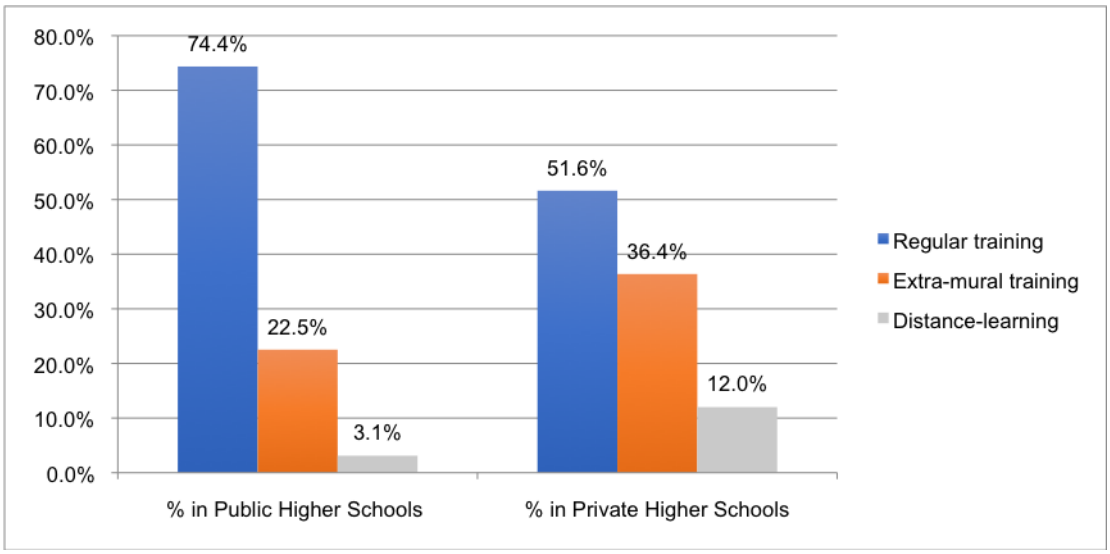
shortcomings in the system that can exacerbate exclusion rather than facilitate access; connectivity being one the most salient among these.

**Figure 16. Share of students by mode of enrolment per type ownership status of higher school, 2019**




*Source: WB authors' calculations based on Bulgarian NSI data*

**An additional aspect that needs consideration in terms of equity in the participation in HE is progression and completion.** Retention and completion are critical in ensuring that resources are well spent and that qualifications and the effective rise in the educational level are achieved. In Bulgaria graduation rates for HE are at good levels when considered in relation to comparator countries. The latest data available, for 2017, show that in Bulgaria 48 percent of those entering to HE complete their studies within the corresponding period of time. This places Bulgaria in the top 7$^{th}$ position among EU MS for which most recent data are available and less than 2 percentage points below Poland and Netherlands.



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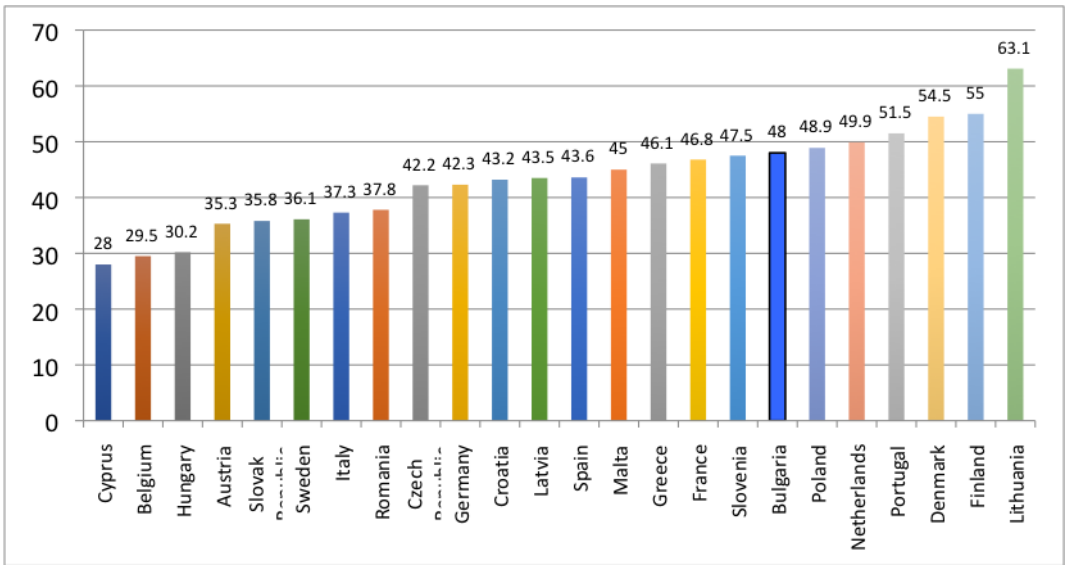
**Figure 17. Graduation rates from HE in Bulgaria and EU member states, 2017**




*Source; World Bank, EdStats*
*Note: Data for Austria and France is for 2016; data later than 2015 was not available for Estonia, Ireland and Luxemburg.*

**A number of initiatives introduced in recent years were aimed at facilitating access to HE to a wider profile of individuals:**

*Targeted to the economically disadvantaged*

- Changes to the lending system were introduced in 2019 by increasing their state guarantee.
- The maximum amount given per scholarships to students in the public HEIs was increased in 2020 from BGN 120 to BGN 150 per month.

*Targeted to people with disabilities*

- Equipping of HEIs with resources needed to support the learning of people with disabilities. This was funded with EU-ESIF funds 2014-2020 and other additional sources. Ten HEIs were the beneficiaries.

*Targeted to all learners that may be impeded from regular or in-person forms of attendance*

- Digital contents for HE teaching were developed to support electronic forms for distance learning. This initiative was financed with EU-ESIF funds 2014-2020

*Aimed at improving retention*

- Since 2016, the lower the completion rate is, the lower is the number of students whose training is to be funded by the state.

**The policies identified are mostly punctual initiatives.** For instance, the increase in the amount paid for scholarships could be simply an adjustment per inflation or could be part of a broader initiative to enhance the package of scholarships offered to HE students and this increase is only an aspect of the package that regards the financial elements of the overall scholarships policy reform. No indication



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has been found yet, however, that these interventions identified are part of overarching reform initiatives directed to set objectives and with an underpinning model and broad vision to follow.

### *Key challenges and policy option recommendations for improving equity and widening access to HE in Bulgaria*

***Challenge 3: Despite positive enrolment rates, the decrease in the number of students represents a challenge for the increasing demands for high skilled labour force.***

The decrease in numbers of students enrolling in HE is mainly due to demographic factors (low-birth rates in previous decades, ageing population and significant emigration). But the analysis above has shown that there is also:

- A low representation of less economically advantaged sectors among the HE students in Bulgaria (taking level of parents' education as a proxy);
- Possible implications of the pandemics in terms of equity in HE, thought this are still not fully understood.
- Gender imbalances in specific study fields; and
- A low participation of over 30s.

**Demographic trends cannot be addressed from an education perspective only, but HE can contribute to make the country more competitive and HEIs can contribute to make their cultural environment more attractive.** Widening participation in order to allow for the up skilling of the population and ensuring good quality of the education and research HEIs provide are key thus. The following policy options focus on the objective of widening the pool of higher education graduates in the country ensuring equal opportunities for access and progression for a diversity of learners.

*Policy options*

- Adopt a **strategy to encourage and widen participation** in HE that is multidimensional in terms of targets population and angles of actions.
- Regarding barriers for the most disadvantaged groups, including or low-income groups, it is important to remember that low income or financial barriers are not the sole factor discouraging their participation in HE. Their low representation in HE can be due to a multiplicity and overlapping factors. Place of residence may determine their low preparation from secondary education but also social cultural contexts may discourage engagement in university studies if these are not perceived as a possible path for young people or their families.
- Support for vulnerable groups' participation in HE should address not only financial barriers, but also lack of motivation and guidance. In this line the types of actions that could be considered include the support of bridge programmes between HEIs and secondary schools with high share of pupils from vulnerable backgrounds. For instance, community reach programmes with HEIs students, summer activities, or schools visits to the university premises.
- In order to tackle disadvantages derived from low quality in pre-university education that may affect more sectors living in more marginalised regions, one solution can be to introduce is state-funded



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programmes for targeted remedial classes for those with better engagement and performance in their local schools and thus support their preparation for the national matriculation exam.

- An alternative is the model currently adopted in Chile to include in the equation that determines admission to HE the position of each student in the ranking of their own local schools. This permits to identify students with motivation and interest in education even if their performance when competing at national level may not allow for these to emerge so clearly.
- Once enrolled students coming from disadvantaged backgrounds may need pastoral support to navigate the transition from school-based education to university, especially for those that the university path was not an option considered in their cultural environments.
- Fostering the participation of mature students, would require an enhancement of the relevance of the offer with labour market needs and an emphasis on providing programmes that have a flexible design in terms of schedule in order to facilitate their participation - and that of students of all ages that work while pursuing HE studies – and to ensure a good quality of learning is achieved.

**A multidimensional approach to widen participation in HE would require to embark in a detailed analysis of the characteristics of those excluded from access to HE.** This would include identifying barriers and needs in order to design the most appropriate tools to reach them and effectively engage then in HE participation. These analyses should also include studies aimed at better understanding the effects of the pandemic on entry and other equity aspects of HE in Bulgaria.

**Financial incentives or accreditation requirement could be the means used to mainstream a focus on widening access to HE.** Rewarding economically HEI that achieve targets of equity and inclusion, for instance, could be one option. The development of process and events aimed at widening participation could be an aspect to assess in QA process too.

**Some successful examples of strategies for widening participation in HE in Europe can be found in the cases of Scotland and Ireland.** Additionally, drawing lessons from local experiences in integrating disadvantaged sectors in education are essential to make the any concerted efforts to reach these populations work for the specific national and local realties. Boxes 2 and 3 present two good practices, one international and the other national.

**The approach to increase quality of research and relevance of HE for the economy adopted in recent years is Bulgaria tackles issues comprehensively from different angles.** Widening participation would require a similar coordinated approach that takes into account the different dimensions of equity and the specificities of each of the groups that are underrepresented.

***Challenge 4: Efforts to ensure quality in a system that expanded and diversified rapidly as a response to decreasing enrolments may affect the provision of HE for different students' populations.***

**The funding system based on number of student places authorized by the state has been reformed recently by a system that contains performance-based elements.** Yet it is not clear how low performance and lack of funds could effectively reshape the HE landscapes and how that may affect the possibilities of diverse populations to access high quality HE.



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*Policy options*

- To create a **system for the classification** of HEIs based on empirical evidence of their actions and profile. The classification would be based on data regarding the HEI size, contributions to the community, the level of enrolments residents' in the geographical region, etc.

- Links with the objectives of "mapping the HE sector" (see above, challenge 1): this form of classifying HEI can lead to system optimization by fostering both competition and cooperation exploiting differential advantages of each HEI and facilitating the generation of synergies among similar HEI profiles and thus underpin an organic harmonization of the system offer that guides the proposal to map the HE sector of the country.

    - Links with the plans to design a sytem to grant universities the label of "research universities" (see below, challenge 7): this form of classifying HEIs is compatible with the current plans to designate "research universities" (see below), but it considers additional criteria in the classification in order to highlight also distinctive characteristics of institutions beyond their research profile.

- A system for the classification of HEIs in Romania was developed with the technical support of the World Bank and can be considered in evaluating options for Bulgaria.

**Box 2, Good Practice in Bulgaria to consider for drawing lessons, Areté's R.O.L.E.S. programme**

Areté's model "R.O.L.E.S.– Roma Opportunities for Leadership, Education, and Success" is a national programme that aims to address the lack of educated professionals, role models, and leaders in the Roma community by supporting promising Roma youth to pursue higher education and careers in the public and private sector and empowering them to be role models.

The camp is an intensive and interactive event for Roma girls between 16 and 25. The programme of the camp is comprised of lectures and workshops to help develop skills and confidence for social and educational achievement among young Roma women. Girls have the opportunity to interact with female role models in the community, learn social and leadership skills, and attend lectures on women's issues.

The topics discussed during the camp are the challenges faced by the Roma women, violence, human trafficking, the prevention of early marriages, and discrimination. Other topics during the camp are the educational opportunities which the girls have, setting goals, and achieving them as well as resisting both parent and peer pressure.

The programme targets young Roma starting in high school—those with academic success and/or leadership potential and motivation, nationally and locally, and guides them through the critical stages to achieve success. The programme aims to provide holistic support to these youths with the goal of increasing the number of Roma that pursue university degrees and/or professional careers and instilling a culture of giving back.

Areté was established in 2005 by Peace Corps volunteers who had been closely involved in the



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design, organisation, and implementation of motivational camps for Roma youth since 2000. The first project was funded by ABF with duration 2010-2013. Based on the results achieved, TSA continued to support the programme—the first project was implemented from October 2013 to October 2015, and the second was implemented from October 2015 to September 2017.

**Box 3. National Plan for Equity of Access to HE (2015-2019), Ireland**

Its vision is to ensure that the student body entering, participating in and completing higher education at all levels reflects the diversity and social mix of Ireland's population.

This Plan sets out goals, objectives and actions that are directed at delivering this vision.

It interacts with a System Performance Framework which is linked to a range of high-level system indicators that assess the performance in the HE system. Specifically, one of the main objectives of the SPF is 'to promote access for disadvantaged groups and to put in place coherent pathways from second-level education, from further education and other non-traditional entry routes'.

The strategy is based on a number of principles, inter alia, the following;

- Consultation with students and prospective students should inform the development of access policy and implementation at national and local level.
- Pathways from further education to higher education must be improved to broaden opportunities for entry to higher education, meet national skills needs and support regional development.
- Systematic collection of relevant, comparable data is necessary to improve the evidence base for policy development and enable effective monitoring and review of national objectives on access, participation, completion and outcomes among under-represented groups in higher education.
- The overall structure of system funding and student financial supports impacts on the participation of under- represented groups in higher education and should be configured to improve access, participation and completion rates.

*Source: https://hea.ie/assets/uploads/2017/06/National-Plan-for-Equity-of-Access-to-Higher-Education-2015-2019.pdf*



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# Quality of Higher Education in Bulgaria

**A context in which HEIs offer increased rapidly and enrolments are decreasing, places significant challenges regarding quality both for teaching and learning and for research.** In addition, financial resources allocated for the sector are relatively low for the region and hence international competition is difficult to match with the local offer. HEI's entry requirements may be lowered to ensure that the state allocated resources per student are received; the skills and qualifications of the staff may not have been adequate at the time of rapid expansion and upgrading that can be hard with little resources or research career opportunities.

## Quality of teaching and learning

**In five countries – Bulgaria, the Czech Republic, Estonia, Finland and Romania – the number of academic staff decreased between 2000 and 2016.**[21] However, in Bulgaria student/academic staff ratio was 12:1 as of the academic year 2017/2018. This is a good ratio, which was below the rate for the EU on average but in line with the rate in Germany (12.1:1) and just above that in Denmark (11.2:1) that year.[22] This shows that the decrease in student numbers has been accompanied by a decrease in teaching staff. It remains to be seen though, the distribution of work-load of the academic staff between teaching and research activities.

**The most outstanding concern regarding academic staff in Bulgarian HEIs is their ageing.** The Bologna Process Implementation Report for 2018 showed that in most EHEA countries the largest share of academic staff is concentrated in the 35-49 age group. Depending on the country, this share ranges between around one third and a half of all academics. The share of the 50-64-year-olds is still relatively high (40 percent or more) in Bulgaria, Switzerland, Greece, Spain, Finland, Italy and Slovenia. Furthermore, in Bulgaria as well as in Greece, Italy and Slovenia if the academic staff under or above 50 years old is compared, in Bulgaria, more than 50 percent of their staff is above 50.

**In most HEIs performance-based payment is not a significant component of academic staff remunerations.** Instead, in most of them, in the definition of payment levels the staff's length of service is more important than their research results or the quality of their teaching. This is not only discouraging for younger staff but also disincentivizes innovation and quality enhancement on the part of those with most years of experience in the profession.

**Age per se should not be a criterion for selection of the academic staff.** Yet, a lack of upgrading of skills in teaching methods as well as not keeping up with recent developments in the relevant research areas result in disengaged students and low quality of research outputs and research-based teaching. At the same time, rigid structures of the traditional progression paths in academia also discourage young people to engage in academic teaching and research, in Bulgaria and beyond.

**Internationalization is one way in which quality can be raised in HE.** However, in Bulgaria mobility opportunities such as the Erasmus+ programme are insufficiently taken. In 2017 just above 3,000

[21] Bologna Process Implementation Report (2018)
[22] Eurostat: educ_uoe_perp04



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students and 2,000 staff participated in outbound mobility under Erasmus+. One possible explanation could be the lack of language skills required to embark in these kinds of exchanges. This, in turn, affects the reception of foreign students and the establishment of different forms of international research collaborations.

**According to the EU "mobility Scoreboard", however, it is not low foreign language skills the main obstacle for mobility for Bulgarian HE students and staff.** In the scoreboard, foreign language preparation is the criteria that Bulgaria is closer to fully meet. Instead, the country does not fulfil, or fulfils only very few, criteria regarding to Information and guidance, portability of student support, inclusion of disadvantaged learners, and the recognition of learning outcomes or qualifications[23]. This means that students that choose to go abroad for a period of study still need to sit the exams planned for the programme they are pursuing in Bulgaria and hence this experience may delay their graduation. In addition, and in relation to the non-fulfilment of the criteria related to the inclusion of disadvantaged learners, the cost of living abroad may not be affordable to many of Bulgarian HE students or staff and for the later in may also be difficult to schedule it with the regular academic calendar.

*"… students that choose to go abroad for a period of study still need to sit the exams planned for the programme they are pursuing in Bulgaria and hence this experience may delay their graduation."*

**The official body responsible for external quality assurance of HE institutions is the National Evaluation and Accreditation Agency (NEAA).** The NEAA's methodology follows the rules and procedures used in the European HE Area and recent efforts have been focusing on the full alignment of NEAA's methodology with the European Standards and Guidelines adopted in 2015 (ESG2015). The Agency had been suspended from full membership in the European Association for Quality Assurance in HE (ENQA) and entered in the European Register of Assessment Agencies quality (EQAR) until 2018 for lack of compliance with the ESG2015 but readmitted in 2018 after a subsequent evaluation by ENQA.[24] The NEAA is the only authority in Bulgaria that can accredit HEIs and thus grant them the right to issue HE degrees and it has in place a Specific QA procedure for the evaluation of distance learning programmes.[25]

**Several concerns with the current methodology for QA evaluations of HEI and their programmes have been identified.** The methodology of NEAA has been criticized for leading to similar and high grade results in all QA assessments it conducts. Some observers also consider the indicators used for the evaluations as subjective and too complex.[26] While peer-based assessments can provide the nuance necessary for holistic assessments, this can also jeopardise constructive feedbacks since the HE system is small and that could hurt sensitivities.

**The introduction of more objective indicators and more emphasis on the inclusion of foreign experts in the QA assessment processes are the two main reforms under consideration to address these problems.** The main obstacle to put this in practice regards the costs of having external evaluators and the difficulties that paying them higher fees could generate with the local experts. An

[23] https://eacea.ec.europa.eu/national-policies/en/mobility-scoreboard/scoreboard-indicators-higher-education-0
[24] ENQA Agency review: National Evaluation and Accreditation Agency (NEAA), 22 February 2018.
[25] Bologna Process Implementation Report (2018), p. 82
[26] Terziev, V., N. Nichev and P. Bogdanov (2017) Prospects for development of HE in Bulgaria. *IJAEDU- International E-Journal of Advances in Education, Vol. III, Issue 9, December 2017*



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additional aspect less considered is that, according to the Bologna Process Implementation Report 2018, student unions in Bulgaria reported that, at least until 2016, there had been no student participation in external quality assurance review panels in the country.[27] Regarding the use of objective indicators, the most outstanding concern is they may not be the best instrument to assess the nuances and multifaceted character of the quality of teaching and learning.

**Regarding the adoption and implementation of Bologna transparency tools, in Bulgaria the European diploma supplement, the NQF and the European Credit Transfer System (ECTS) are all in place.** The Diploma Supplement, which provides a detailed description of study components and learning outcomes achieved by its holder, and thus allows HEI and employers to easily understand graduates' skills and competences, are issued free of charge in Bulgarian and in one of the widespread European Union languages. Yet, they are not issued automatically upon graduation but have to be requested by the graduate. The NQF has been adopted in 2012 in Bulgaria and its compatibility with the Qualifications Framework in the European HE Area (QF-EHEA) has been self-certified. Yet, the self-certification report still cannot be consulted on a public website.[28] Furthermore, the NQF has not been fully developed for all HE degrees and not all profession in the framework are regularly updated.

**As for the ECTS, in Bulgaria there is a national system that is ECTS compatible.** In the same way that ECTS are linked to learning outcomes, in Bulgaria HEIs describe all programmes and their components in terms of learning outcomes. However, unlike in most EHEA countries, there is no automatic recognition of ECTS across HEIs.[29] Also, although ECTS have been formally introduced, the system measures quantity of credits rather than learning outcomes achieved.[30]

**The Bulgarian University Ranking System (BURS) is in place since 2010 and is an essential tool for the system that enjoys worldwide recognition as a pioneer in national rankings and for its rigorous methodology.** According the interviews held with key stakeholders involved in the inception and development of the BURS, this was created as a transparency tool aimed mostly at aiding prospective students and their families to make informed choices about their university studies. As such it collects and publishes every year critical information about the characteristics, quality and employment opportunities by study programmes and HEIs.

**In practice, the BURS is mostly used for management and policy purposes rather than by prospective students to plan their careers.** In a recent survey among university rectors and vice-rectors in Bulgaria, a third of the respondents who had an opinion believed prospective students are rather not familiar with the raking system. Instead, 4 in 5 of the respondents agreed that the results of the ranking are taken into consideration in their HEI management decisions.[31] In addition, since 2016 data on employment outcomes and research production collected by BURS are used by the GoB in the formula defining the performance-based component of the funding allocated to HEIs.

[27] Bologna Process Implementation Report (2018), p. 82
[28] Bologna Process Implementation Report (2018), p. 120
[29] European Commission (2019) Education and Training Monitor 2019
[30] Bologna Process Implementation Report (2018), p. 121
[31] Global Metrics (2020) Survey conducted between 29th September and 12th October 2020. Responses were received from 34 of the 51 HEIs of the country. The total number respondents were 40.



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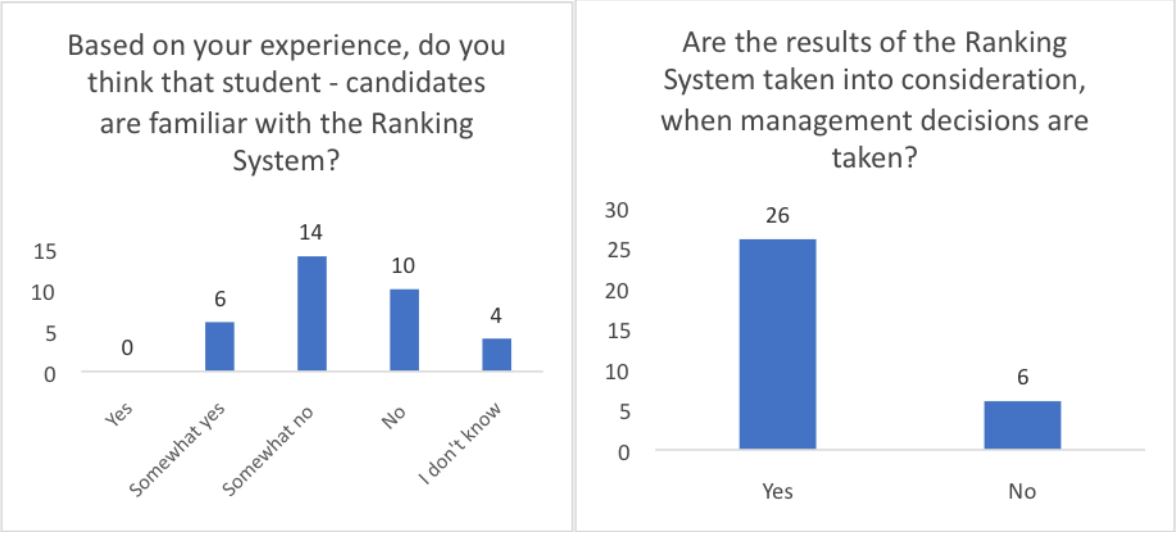
**Figure 18. Opinions of HEIs high-level management about the use of BURS, 2020**




*Source: Global Metrics (2020)*

**At present the survey components of the BURS are implemented less frequently than the year basis on which the ranking is overall updated.** This is partly due the higher costs of conducting surveys as opposed to collecting administrative data. But it also reflects that survey data is considered less valuable for management and policy-making purposes.

**In the BURS methodology surveys are used to gather information on satisfaction with study programmes from two stakeholders – students and employers.** Students' surveys focus on content and student experience and are conducted every 4 years approximately. The surveys with employers gather their satisfaction with employees that graduated within 5 years before the interviews. These are run more frequently than students' surveys but constitute the only source of information on satisfaction with programmes in relation to their relevance to the labour market since no graduates' surveys are part of the BURS methodology. The lack of capacity to carry out more comprehensive and frequent surveys impedes obtaining a full and nuanced picture that can be a critical supplement to administrative data in supporting management decisions. The reasons behind this lack of capacity can be found in the dependence of the BURS on external financial support.

## Quality of research

**In line with the SDHE 2014-2020 objectives regarding research activities and development of market economy-oriented innovations, HEIs have improved their research outputs and infrastructure.** However, the quality and internationally relevance of the research outputs of Bulgarian HEIs remain low. Also, Bulgaria's outputs in terms of internationally registered patents lag behind peers, and patent outputs have been decreasing over time.[32]

**While Bulgaria's publication output has increased significantly since 2015, on average these publications are not widely cited or impactful compared to those of peer countries.** The number of

[32] World Bank, PER Bulgaria 2020, Draft July



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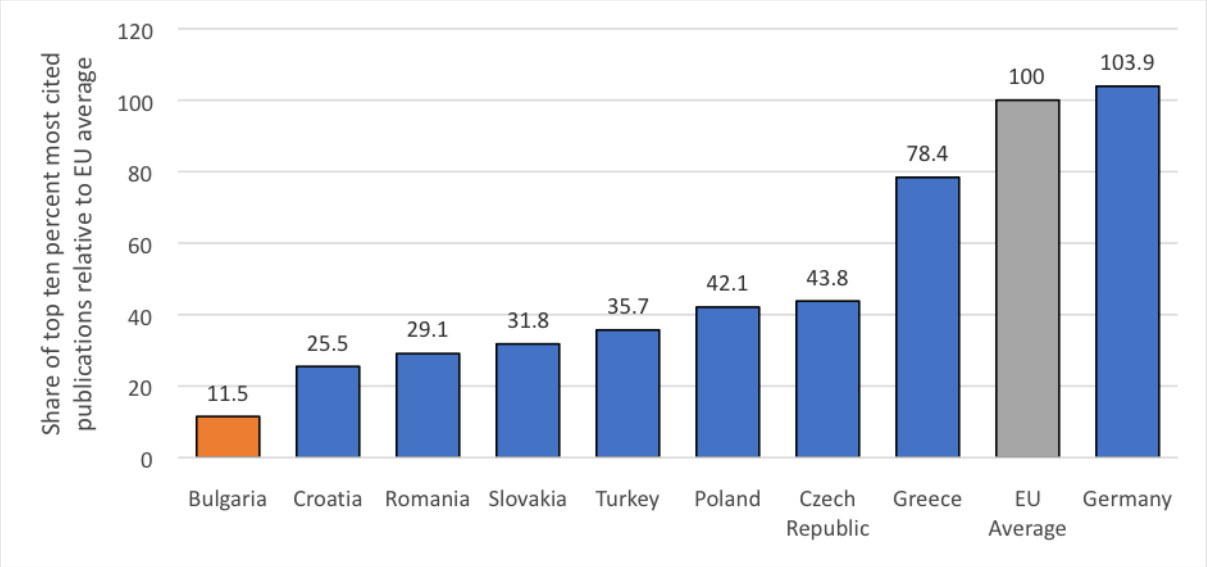
research outputs grew at a rate of almost 9 percent per year from 2015 to 2019. Yet, few national institutions beyond the Bulgarian Academy of Sciences, contribute with high quality and impact publications. Bulgaria is ranked last among its peers in scientific publications among the top 10 percent of most cited publications worldwide as a percentage of total publications in the country in 2019 (Figure 19). This indicates that a relatively large share of publications produced nationally may not be relevant to the international (or even domestic) scientific community.[33]

**Figure 19. Publications among the top 10 percent of most cited publications worldwide as a percentage of total publications in the country, relative to EU average**




*Source: European Innovation Scoreboard (2019)*

**Additionally, Bulgaria lacks any specialization or comparative advantage in many of the research areas that are important for Industry 4.0 and digitization.** For example, no peer country had a lower relative concentration of publications in the research area of telecommunications, business economics, and engineering. By contrast, no peer country had a higher relative concentration of publications in the research areas of astronomy and astrophysics, physics, and chemistry.[34]

**Improving the quality of HE has been at the core of most policy reforms introduced for the sector in recent years.** A variety of interconnected measures were introduced with the aim of rising the quality of Bulgarian HE and making it internationally competitive and relevant. Some pending challenges emerge also from the current implementation of these measures, as detailed below.

*Changes in the funding mechanism for public HEIs that gradually increased the weight of performance over per-student funding.*

- They were introduced through amendments to the HE Act in 2016.

[33] World Bank, PER Bulgaria 2020, Draft July
[34] World Bank, PER Bulgaria 2020, Draft July.



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- The performance component of the funding formula constitutes at present 60 percent of the money allocated to HEIs for their ordinary operational costs – which in turn represents about 80 percent of the total of funds transferred from public funds to HEIs.
- The performance component of the funding formula takes into account quality indicators regarding research outputs and graduates employment outcomes.
- The formula is highly complex and sometimes it can be difficult for HEIs to understand it. This means that accountability of the process and the intentions to incentivize more and better research in universities can be limited. If HEIs find it challenging to understand the formula, it will be difficult for them to develop targeted actions for quality improvements that can make a difference in this calculation.
- The Strategy for Development of Higher Education (SDHE) 2021-2030[35] recognizes that these new mechanisms may have negative implications for regional HEIs and thus some revisions are needed.

*Changes in the QA accreditation system for programmes and institutions*

- They were introduced by amendments to the HE Act in 2020.
- It establishes that an academic lecturer can be counted as part of the academic staff only for one HEI.
- It reduced the scope of external QA assessments and places more responsibility in the HEIs and their internal QA systems. Extra assessments are carried out in initial accreditations only.
- The most significant change was the introduction of study fields-based external QA for programmes' accreditation and re-accreditation. This means that for all programmes in a given study field the QA assessment will be carried out at the same time across HEIs. This is intended to reduce bureaucratic burden on universities and the first experiences were successful so far.
- An additional innovation was the decision to develop an online platform where HEIs can regularly submit the internal QA self-reports, accompanying documents and administrative data that are needed for each QA evaluation.
- Challenges regarding objectivity and the difficulties of assessing the quality of teaching and learning mentioned earlier remain unaddressed.

*Addressing deficits in teachers' training and curricula updates*

- In order to enhance the academic staff's teaching skills minimum national requirements for holding an academic position were introduced. These are tailored to the specifics of the various scientific areas and professional fields and/or artistic or sports fields of the degrees offered.
- Financial support was provided for the development of a system to raise the qualification levels of teachers in HE of teachers, for updating curricula, and introducing e-learning and digital resources. The financial resources were provided by the EU-ESIF 2008-2013 and 2014-2020.

*Addressing bridges in rules that guarantee learning and research outcomes quality*

- A Commission on Academic Ethics under the Minister of Education and Science was established for dealing with violations in the procedures carried out in any step of the path leading to issuing degrees or to the holding of an academic position.
- It regards also concerns with signs of plagiarism in dissertations and publications submitted for evaluation, unreliability of presented scientific data, as well as conflicts of interest in the formation of the composition of the scientific juries.

[35] The National Strategy for the Development of Higher Education in the Republic of Bulgaria (NDSDHE) 2012-2030 has been recently adopted by the Council of Ministers and is currently in Parliament for their consideration and voting.



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*Large-scale programmes for development of the scientific infrastructure in the scientific organisations, including in many HEIs*

- These include the creation of a number of Regional Research Centers and Centers for Excellence under the remit of HEIs since 2015.
- The programme promotes the establishment of alliances and partnerships across the HE sector and with other stakeholders – including NGOs, business and governmental agencies – for the development and in the work of these Centers.
- They were financed by the EU-ESIF funds 2014-2020
- The development of a National Road Map for scientific infrastructure started in 2018 and 50 percent of the investments are made in HEIs.

*To allow HEIs acquire the status of "research universities"*

- The concept was introduced through amendments in the HE Act in 2016 and further details were defined in a more recent amendment in 2020.[36]
- HEIs can become "research universities" if they fulfil certain criteria related to their research results and measured according to a set of indicators defined in an act of the Council of Ministers, including:
  - number of published and referenced scientific articles in international databases,
  - number of international patent applications,
  - number of citations in peer-reviewed and indexed journals by other authors in international databases.
- The criteria and procedures that will be used to define which universities are granted the status of "research universities" are still under consideration.[37]
- Yet, a number of universities exploited this new legislation and opened research institutes in HEIs. Twelve HEIs created a total of 17 institutes to date.[38]
- The list of research universities shall be updated annually by November but those that are included will remain in the list for 4 years.
- Requests for inclusion in the list will be by application to the MES and not via a thorough review of the HE sector.
- Obtaining the title of "research universities" would allow these universities to receive additional funds for research purposes and therefore improve the quality of their outputs and, in turn, enhance the quality of the training since this will be based on direct experience of research in the corresponding field.
- Some pending questions:
  - If new universities will be included every year and those admitted will remain for 4 years, will the indicators and entrance thresholds remain the same every year for 4 years? And will there be an unlimited number of universities that can be included in the group?
  - It is yet to be defined if other universities will be expected to continue to conduct research and if they will, how they would be supported to do so and in a way that they can also aspire to contribute with good quality outputs.

[36] Art. 17a. (HIA) (New, SG No. 17/2020) (1)
[37] NSDHE 2021-2030, adopted by the CoM.
[38] NSDHE 2021-2030, adopted by the CoM .

## *Key challenges and policy options recommendations for improving quality of HE in Bulgaria*

**While significant efforts were introduced and important progress is being made in recent years regarding the improvement of HE quality in Bulgaria, various pending challenges have been identified in this section.** These comprise:

- Ageing of the academic staff – which would require increasing the attractiveness of the academic career for the young in terms of better salaries and career development prospects but also seek to encourage upskilling and updates for older staff.

- Low internationalisation of staff and students – which, it has been noted, could be improved by addressing the lack of portability across countries of credits and knowledge acquired abroad.

- Concerns with the quality of QA – which could be addressed by the incorporation of quantitative indicators and foreign experts in the evaluation panels, although the difficulty of measuring quality of teaching and limited resources to finance the costs of foreign experts remain unresolved.

- Undeveloped aspects of BURS – these are mainly due to high financial dependence of the BURS from external and donors' funds – such as EU and NGOs funds - but also to a preference for quantitative over qualitative data, despite this may limit richness and nuance of information that can be critical in policy making and HEI management. To fully exploit the potential of the system, the low use of the BURS as an information tool for prospective students could also be addressed.

- Need to fine-tune the newly introduced performance-based funding system – this would be needed to ensure that regional universities and students from more disadvantaged sectors are not left behind or not guaranteed equal opportunities to participate in HE, respectively, and to ensure that this approach effectively contributes to enhance HE quality across the sector.

- Unfinished design of the initiative to designate "research universities" – this mainly concerns decisions regarding the criteria to define such universities and the role to be assigned in the system to those universities that are not granted that status.

**In the next paragraphs a number of policy options are presented in relation to a selection of the above challenges.** These challenges have been grouped according to their strategic complementarities and treated as such in the discussion of policy options. The options are presented with the objective to suggest directions to take in the operationalization of actions, which have already been identified in the forthcoming SDHE 2021-2030 as strategically important for the sector.

***Challenge 5: Deficits in key tools to assess and measure quality of HE, especially regarding the QA Agency current methodology and the incomplete exploitation of BURS features.***

**Defining roles and synergies across these two critically important institutions responsible for quality aspects in the HE system in Bulgaria could help to enhance features and functionality of both.** While BURS focuses on outcomes, including of research and learning (in the form of employment outcomes) as well as in the form of students' satisfaction, NEAA's focus is on the provision, including infrastructure and teaching resources, as well as contents and delivery.



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**But these two sides of quality feed into each other.** Hence QA assessments could use outcome data to identify areas that may be in need of special attention and BURS could contribute by tracking progress that may follow from QA evaluations feedbacks and recommendations. For this coordinated approach to work for the benefit of improving quality of HE in the country the various challenges mentioned earlier need to be addressed. The following are some more specific policy options that could be considered for that purpose.

**QA methodology may need adjustments**. Some concerns have been identified regarding the NEAA methodology and its implementation procedures when conducting QA assessments.

*Policy options regarding QA*

- ✓ While the adoption of more objective and quantitative indicators could be an option to address concerns with subjectivity, it can be difficult to grasp in its full complexity aspects related to teaching and learning quality with just quantitative indicators.

- ✓ One option could be to combine the introduction of quantitative indicators, including the establishment of benchmarks according to different types of universities, for instance, while in parallel the assessment of teaching and learning can be conducting making use of approaches that take into account the importance of subject's assessments and points of views but without jeopardising fair judgments.

- ✓ For the introduction of quantitative indicators in QA assessments the recent revisions to adopted by the Italian Quality Assurance agency could be taken as an example of good practice to draw lessons from, with regards to the assessment of teaching and learning the Teaching Excellence Framework in place in the United Kingdom offers a case to learn how the use of metrics and experts reviews can be made to work together to minimising bias and ensure holistic assessments. Boxes 4 and 5 present these cases.

- ✓ The most important element to ensure objectivity and at the same time grasp a nuanced view of the quality of education offered in HEIs and their programmes is the impartiality and diverse composition of the evaluators panel. The inclusion of foreign experts but also of students is of critical importance to guarantee panel comply with these two needs. For a QA system to adequately perform its function it is of utmost importance that the higher costs entailed in including foreign experts in evaluation panels are financially supported either by state funds or by raising the fee paid by universities for their QA evaluations.

- ✓ An open multi-stakeholder consultation on the current NEAA methodology could be an option to ensure all views are taken into consideration. The process can have the additional purpose of enhancing the understanding of the European approach to QA and reflected in the ESG adopted for the EHEA in 2015.

*Policy options regarding BURS*

- As an alternative, or in addition, to state budget funds or EU financial support, the BURS could be made more financially sustainable through fixed flat rate to be paid by the universities, it can be a consortium of universities also. It can also count with the support of employers; this can also be for instance in the form of the support of employers' chambers.

- In the case of Alma Laura in Italy, a successful system that provides online information on HEIs and their programmes, on students' profiles and on graduates' employments outcomes, it is a university consortium that, as an independent enterprise, and with the support of the national Ministry of Education and in partnerships with the private sector, runs the system.



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- The BURS could enhance the system by incorporating a graduates' outcome tracer component. This would entail systematically collecting survey data regarding the graduates' experience in using the skills and competences in the world of work.

- There are several versions of Graduate Tracer Systems that could be considered in light of the needs of the sector in Bulgaria. In addition to the Italian model the recently redesigned Graduates Outcome study in the UK is an example of good practice. The one conducted by the QA agency of Catalonia in Spain combines interviews with employers, which is already part of BURS, with graduates.

- To increase the use of BURS as an information tool the development of actions in partnership with employers or new online features such as students' videos reviewing their study programmes or professional careers, as well as CV databases, for instance, could be of help. The integration with a geo-referenced map with university offer could also be a point of attraction for student users (see earlier, challenge 1)

***Challenge 6: insufficient impact of Bulgarian university's research in the scientific community and the economy can be partly addressed by designing a system of "research universities", but the details of this proposal have not been yet fully defined.***

This concerns especially the definition of the indicators and methodology to define which universities get the title of "research universities" as well as definition of the role of the universities that are not included under this category.

*Policy options*

- To conduct a thorough review of the system instead of a system based on applications. The review could be based on using BURS data and deciding the cutting-off points to then classify universities in different profiles, one of these profiles can be "research universities" and another one can be "teaching universities", for instance, as discussed in relation to challenge 5. This approach would allow highlighting also distinctive characteristics of institutions beyond their research or teaching profiles, for instance "socially oriented universities" if focused on community engagement or inclusion.
- Deciding the extent to which universities not classified as "research universities" will continue to receive public funds for research is critical as this will lead to reshape the HE sector in different ways. Some options include, for instance:
    - Provide extra public funds for "research universities" and for a second group of "runner up" universities, where overall or in specific departments the quality of research can be improved and eventually, they could be classified as "research university". The rest of universities do not receive extra funds. In this option the first and the second groups of "research universities" can receive the same, more, or less money that the other respectively.
    - Make extra public funds available to all universities, but for those that are "research universities" these will be automatically granted whereas for those outside the group the funding will be granted on a project based scheme and they could use funds for research or for other purposes more in line with the university profile – for instance teaching or social inclusion activities.
- To assess whether the categorization is needed given that the funding formula already sends more money to those universities which research production quality is better. The formula should already by default be operating on a basis of sending additional funds to more "research-oriented"



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universities. Altering the weight of the research element in the current formula for performance funding could be considered a more efficient approach to increase funds for those universities.

**Box 4. Introducing quantitative indicators for QA purposes, ANVUR Italy**

The system for the Accreditation and Evaluation in Higher Education was recently reformed in Italy as a set of indicators were develop and redefined in early 2019 (Ministerial Decree 6/2019)
In what regards programme accreditation and evaluation and their annual reviews.

The new set of indicators underlying the annual monitoring - as defined in the AVA Guidelines - is richer in information and offers the possibility of making different types of comparisons (e.g. diachronic comparisons on the same indicators).

The indicators are organised in five dimensions of students' trajectory: regularity; results of training activities; internationalization; satisfaction; employability; and consistency of the teaching staff. The type of degree (Bachelor's Degree, Single-Cycle Master's Degree and Master's Degree) and the different teaching methods (such as part-time, distance, etc.) were taken into account in the design of the indicators under each dimension.

The values of the individual indicators are calculated and returned annually with reference to three academic years (or cohorts of enrolled students), making it immediate to identify trends within the structure.

In addition, for each indicator, benchmark values are provided referring to the courses of the same Class in the university and the geographical area where the programme is taught.

The dissemination of quantitative indicators and related benchmarks aims to provide an additional tool for monitoring and self-assessment activities in universities and in the study programme.

Data is published in the Portal for the Quality of the Institutions and Programmes by 15 July each year, on the bases of the Single Annual Study Programme Card (SUA-CdS) submitted by HEIs in the previous academic year. The login credentials to the Portal are managed directly by the universities.

*Source:* *https://www.anvur.it/attivita/ava/indicatori-di-monitoraggio-autovalificazione-e-valificazione-periodica/*



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**Box 5. Teaching Excellence Framework (TEF), United Kingdom**

The TEF was introduced with the purposes of informing students' choices about what and where to study; raising esteem for teaching; recognising and rewarding excellent teaching; and better meeting the needs of employers, business, industry and the professions.

The TEF looks at what HEI are doing in addition to the basic national quality requirements and participating universities and colleges can achieve either gold, silver, bronze, or a provisional award.

- A provider is awarded **gold** for delivering consistently outstanding teaching, learning and outcomes for its students. It's of the highest quality found in the UK.
- A provider is awarded **silver** for delivering high quality teaching, learning and outcomes for its students. It consistently exceeds rigorous national quality requirements for UK higher education.
- A provider is awarded **bronze** for delivering teaching, learning and outcomes for its students that meet rigorous national quality requirements for UK higher education.
- **Provisional awards** are given to providers that have been deemed eligible to take part in the TEF, but they do not yet have enough data available to be fully assessed.

The awards are granted following an assessment conducted by an independent panel of students, academics and other experts.

These assessments draw on currently available, nationally collected data, to provide panellists and assessors with a common set of metrics that relate to each of the aspects of teaching excellence.

The metrics will be considered by panellists and assessors alongside the evidence contained in a provider submission to inform their judgements.

The TEF assessment uses a range of official data, combined with a detailed statement from each provider to arrive at the final rating.

The TEF data considers in these assessments the entry qualifications and characteristics of students, and the subjects studied, at each provider. These can be very different, and the assessment is based on what each provider achieves for its students within this context.

*Sources: https://www.officeforstudents.org.uk/advice-and-guidance/teaching/about-the-tef/ and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/658490/Teaching_Excellence_and_Student_Outcomes_Framework_Specification.pdf*



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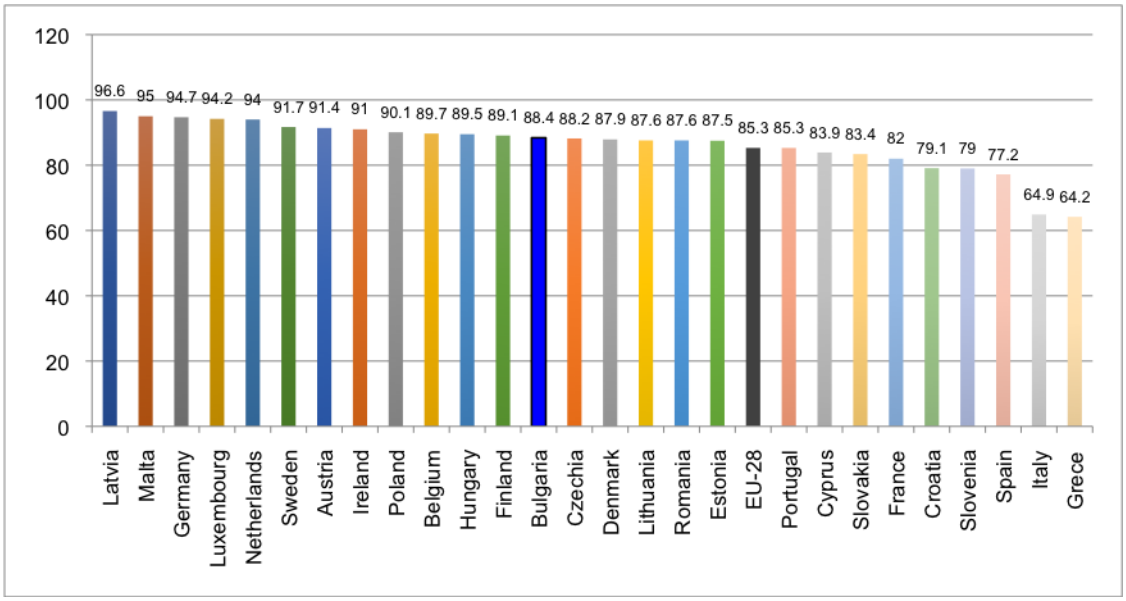
## Relevance of HE for the labour market and the economy

**Returns of HE continue to be high in Bulgaria.** HE graduates have significant better employment rates than those with medium and lower levels of education. The employment rate of HE graduates in Bulgaria is well above that for the EU on average, 88.4 percent in Bulgaria and 85.3 percent in the EU (Fig 20).

**Those with HE degrees are also more likely to be in employment within the first three years following graduation than those with medium level of education.** This difference is more marked in Bulgaria that in the EU on average (Fig. 21). While 88.4 percent of those with HE degrees were in employment within the three years after graduation, only 67.5 of those with upper secondary or non-university tertiary education were so.

**Figure 20. Employment rates of HE graduates, 2019 (%)**




*Source: Eurostat*



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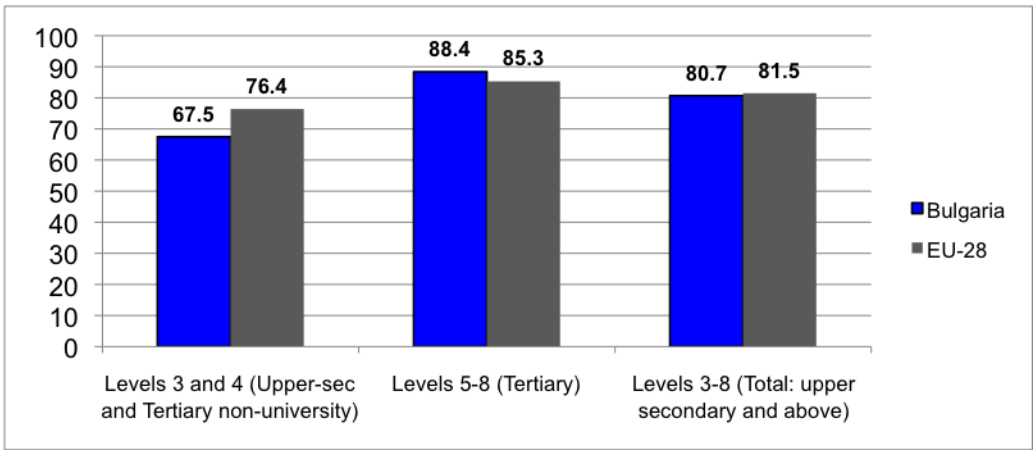
**Figure 21. Employment rates 20-34 after 1-3 years following graduation by level of education from level ISCED 3-8 (2019)**




*Source: Eurostat*

**Data from the BURS indicate that employment rates vary across fields of specialization**. In 2020 the lowest unemployment rate (under 1%) and the highest level of applicability of the degree acquired (above 90%) was observed among the graduates of Military Sciences, Medicine, Dental Medicine, Theory and Management of Education, and Pharmacy. Conversely, less than 30 percent of the graduates in Fine Arts, Food Technology and Tourism were working in a professional field aligned with their degree specialisation.[39] It is noteworthy also that BURS 2020 data show that while unemployment in the STEM specialities of Mathematics and Engineering is low in Bulgaria, there are other STEM related specialities that are among those where unemployment is high. In particular, Chemical Technologies, Biological Sciences, Plant Protection, Earth Sciences, are among the 10 specialties for which unemployment was the highest in Bulgaria in 2020. This finding is consistent with recent evidence[40] pointing out to the need to adopt a more nuanced approach to the analysis of STEM shortages and thus to the policy decisions taken in this regard.

**Income levels are significantly correlated to higher education in all regions of Bulgaria.** From the data in Figure 22 it emerges that those regions with higher share of people with higher education degrees annual average salaries are higher. The figure illustrates, nevertheless, the large gap between Bulgarian capital, Sofia, and the rest of the country in both educational attainment levels of its population and income levels.

[39] BURS database

[40] Smith, E., White, P. (2019) Where Do All the STEM Graduates Go? Higher Education, the Labour Market and Career Trajectories in the UK. *J Sci Educ Technol* **28:** 26–40. https://doi.org/10.1007/s10956-018-9741-5. The findings of this research suggest there is no overall shortage of STEM graduates but there is considerable variation in the career outcomes and trajectories of different groups.



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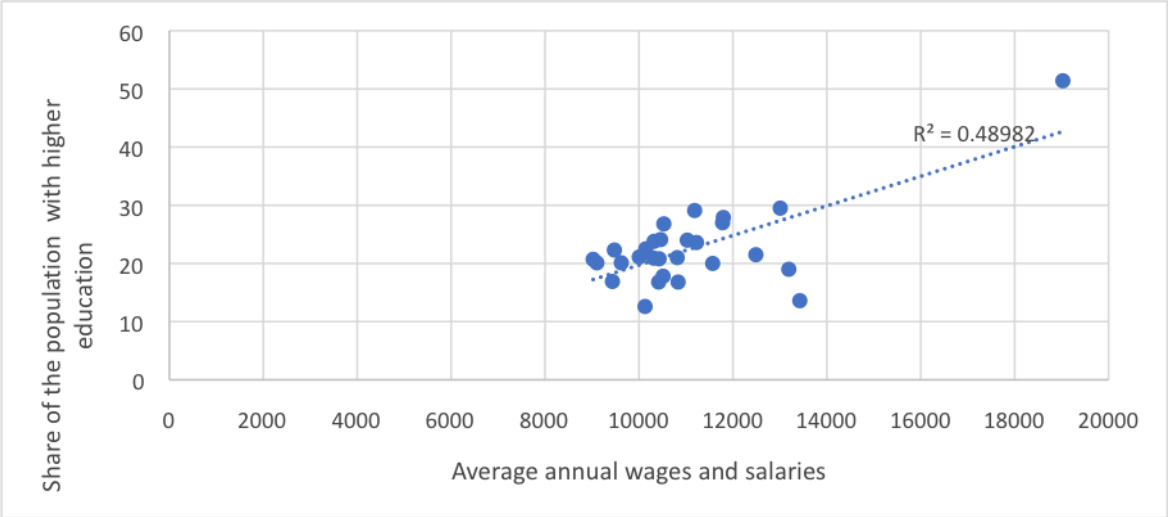
**Figure 22. Correlation between share of the population with higher education degrees and annual wages by geographical regions (25-64 years old), 2019**




*Source: NSI, 2018*

**Income levels also vary greatly according to the graduates' degrees.** BURS found that in 2019 students graduated from "Informatics and Computer Science", "Mathematics", and "Research, extraction and development of ores and minerals" earn the highest average insurance income, which is taken as a proxy in the BURS as actual incomes.

**But the university in which the graduate studied also influences the income levels.** The graduates in "Informatics and Computer Science" in "St. Kliment Ohridski" Sofia University had the highest average insurance income in 2019 and 2018. Yet, the average income of graduates in the fields of military defence, medicine and education differs less by HE institution.

**A key concern with the employment of HE graduates is that they are overqualified for the jobs they do.** In Bulgaria the percentage of graduates who work in positions requiring HE was 50.3 percent in 2019, a slight increase from the previous year when it was 49.3 percent and 4.3 percentage points higher than in 2014. More than 60 percent of graduates from Master degree work in positions that require HE and Bachelor degree working in such positions are 36 percent. More data for international comparisons would be necessary to reflect on the level of over-qualification of employed HE graduates in Bulgaria.

**The most significant concern with regards to relevance of HE in Bulgaria is the alignment of the education provision with the skills and professions needed in the labour market.** GoB forecasts and development priorities indicate that more graduates are needed in the areas of STEM, especially ICT. Yet, graduates in the fields of Business and Law continue to be high in the country whereas those from ICT and key professions such as mathematics, engineering and technical fields, and natural sciences are still low (Figure 23). The distribution of graduates per study field in 2018 did not differ much from 2015. In 2018, as in 2015, about a third of graduates studied in the fields of business, administration, and law. As in 2015 too, in 2018, the other two most preferred fields were, first, social sciences, journalism, and information, although in 2018 there was a slight decrease – from 15.9 to 13.1 percent – and, second engineering, manufacturing, and construction – also decreasing



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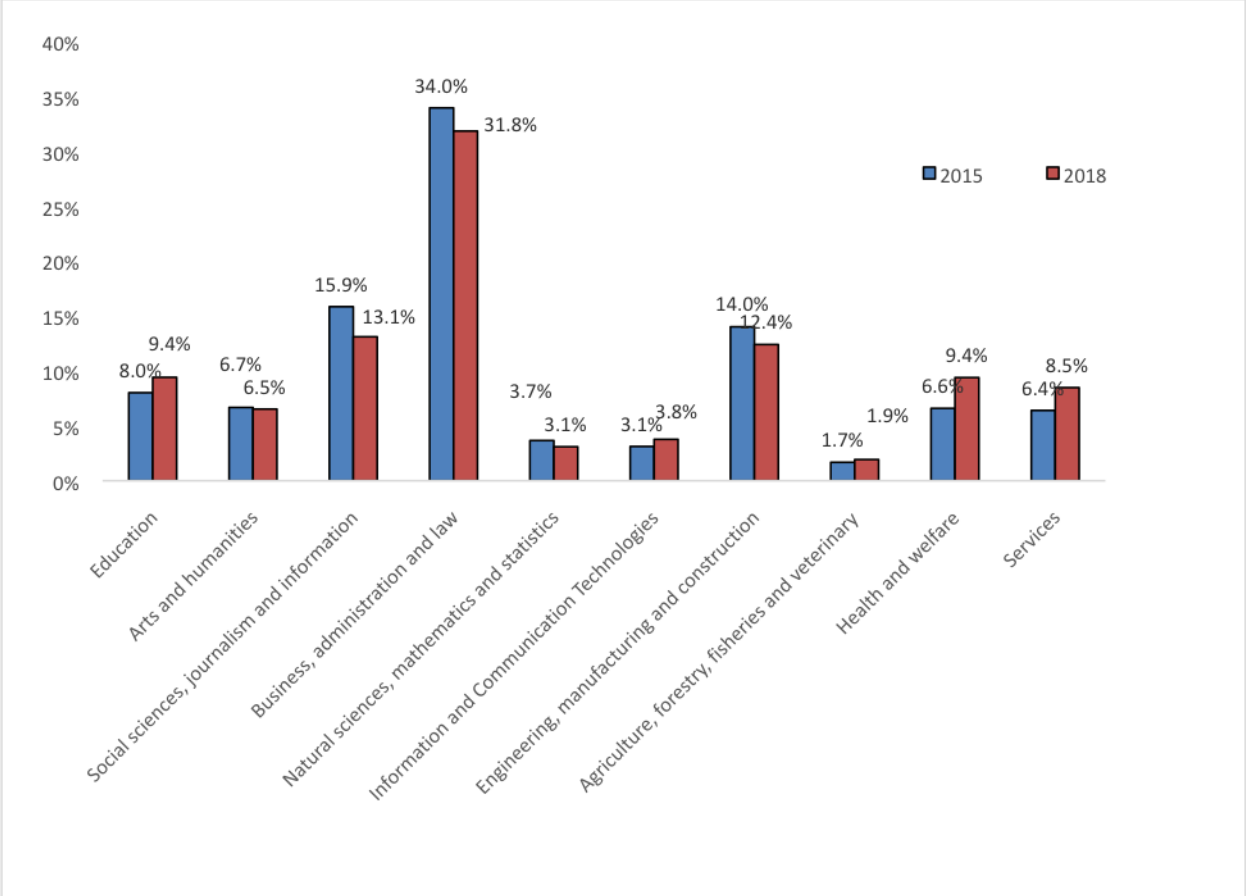
from 14 percent in 2015 to 12.4 in 2018. In 2018 still less than 5 percent of graduates obtained degrees in ICT, mathematics, engineering and technical fields, and natural sciences, again as in 2015.

**Figure 23. Graduates by fields of specialisation in Bulgaria (2015-2018)**




**The share of graduates in certain STEM fields is markedly low in Bulgaria when compared with the EU averages,** This is particularly so in specialities in the natural sciences, mathematics and statistics in which the share of graduates in the EU has been more than double (6.4 percent) than that in Bulgaria in 2018 (3.1 percent), as Figure 23 shows. However, in engineering the difference is less marked, with the share of these graduates in EU on average being just a fifth higher than in Bulgaria in the same year. Furthermore, in ICT fields the share of graduates in Bulgarian and the EU are at the same level, 3.8 percent. Figure 23 also shows that the majority of graduates in the EU, as in Bulgaria, are in the fields of business administration and law, even if in the EU on average they represent a quarter of the graduates and in Bulgaria a third.



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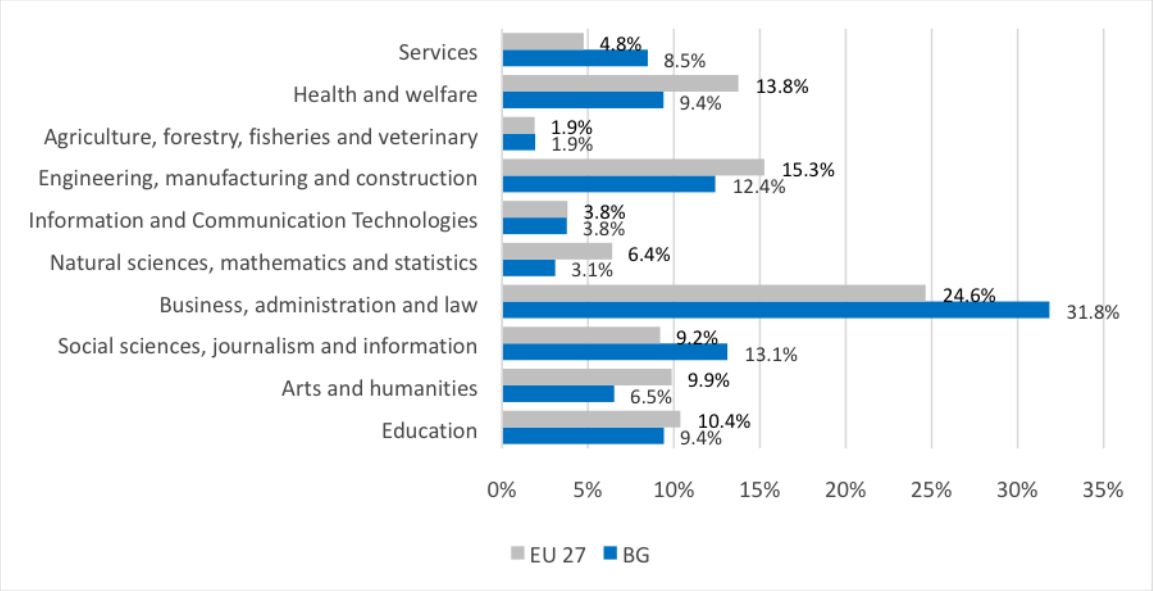
**Figure 24. Graduates by field of specialization in Bulgaria and the EU, 2018 (%)**




*Source: Eurostat*

**Data from the NSI for 2019 show a slight increase in the share of graduates in STEM fields, from 19 percent in 2017 to 19.5 percent in 2019.** Within the STEM fields variation has been mixed as shown in Table 3, with increases registered only in the fields of ICT and physical science, and yet these account for only 0.7 and 0.1 percentage points respectively. Furthermore, the numbers of graduates in STEM fields has decreased in the last 3 years recorded, as shown in Table 4, with the exception also of graduates in ICT and Physical Sciences. The highest increase concerned graduates in ICT for which in 2019 there were 5 percent more graduates in 2019 than in 2017, but still this represents an increase of just 65 more graduates in ICT. The different evolution in the number and share of graduates within STEM fields should be analysed for policy design purposes in the light of the observations made earlier in this report about different employment outcomes for each different STEM field.

**Table 3. Evolution STEM graduates as share of total graduates 2017-2019**

| Study Field | 2017 | 2018 | 2019 | Change 2017-2019 |
|---|---|---|---|---|
| Biological and related sciences | 1.0% | 0.8% | 1.0% | No change |
| Environment | 0.9% | 0.8% | 0.6% | Decrease |
| Physical sciences | 1.1% | 1.2% | 1.2% | Increase |
| Mathematics and statistics | 0.5% | 0.4% | 0.4% | Decreasae |



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| | | | | |
|---|---|---|---|---|
| Information and Communication Technologies (ICTs) | 4.2% | 4.4% | 4.9% | Increase |
| Engineering and engineering trades | 11.4% | 10.6% | 11.2% | Decrease |
| **Total STEM** | **19.0%** | **18.2%** | **19.5%** | **Increase** |

*Source: WB calculation based in NSI data ((https://www.nsi.bg/en/content/4910/graduates-tertiary-education-educational-qualification-degree-and-narrow-field)*

**Table 2. Evolution of number of graduates from Bachelor and Professional Bachelors by STEM fields**

| STEM Field | 2017 | 2018 | 2019 | % change 2017-2019 |
|---|---|---|---|---|
| Biological and related sciences | 310 | 249 | 282 | -9.0% |
| Environment | 267 | 226 | 174 | -34.8% |
| Physical sciences | 335 | 354 | 343 | 2.4% |
| Mathematics and statistics | 147 | 124 | 116 | -21.1% |
| Information and Communication Technologies (ICTs) | 1301 | 1303 | 1366 | 5% |
| Engineering and engineering trades | 3559 | 3154 | 3109 | -12.6% |
| **TOTAL STEM** | **5919** | **5410** | **5390** | **-8.9%** |

*Source: NSI (https://www.nsi.bg/en/content/4910/graduates-tertiary-education-educational-qualification-degree-and-narrow-field).*
*Note: the number of graduates for ICT and Engineering & Engineering Trades include graduates from both Professional Bachelors and Bachelors*

**A number of universities have attracted specialists for joint developing curricula and programmes with business representatives and other purposes with the objective to update and keep contents relevant for the respective labour markets.** All of the HEIs that responded to a survey conducted in Bulgaria among rectors and vice rectors in October 2020 had partnered with business organisation for the development of curricula and educational content. In terms of collaboration for research and development the most common activity that HEI and business organise together concerns internships with only 3 or less of them collaborated in the development of patents, organisation of events, or the staff offering consulting services.

**The most salient measures adopted in recent years aimed at improving the relevance of HE for economic and societal needs include** the introduction of the priority professional fields, the increase in internships and some steps towards developing an integrated career system as well as the creation of competences profiles in HE. The contracts signed between the minister and the rectors of the public HEIs, whereby the rectors commit to implement a defined plan during their mandates, also include commitments regarding improving the relevance of their HEI's provision for the economy and labour market's needs. Some more details of the two most salient initiatives in this area follow.



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**Introduction of protected specialties and priority professional fields**

- Labour supply and demand forecasts developed by the MLSP, as well as an analysis of job vacancies from nationally represented employers' organisations conducted by the MES.
- Financial incentives were created for candidate students and for HEIs for training in these professional fields and specialties.
- In the public space was systematically explained the benefits to prospective students and for society in training more students in STEM fields (science, technology, engineering and mathematics).
- In parallel, and initiative to increase enrolments in ICT specializations[41] was created which included launching of the "Concept of Promoting Learning for Software Specialists" (2015) and created an effective framework for linking HE with business and with specialised secondary schools in this field.

**Increasing internship opportunities for HE students**

- Opportunities to employers to establish partnership agreements were created via amendments in the HE Act. These agreements are aimed at coordinating the offer of internships with HEIs.
- Over 120,000 students were involved in internships.
- The schemes were funded by EU ESIF funds.

## *Key challenges and policy option recommendations for improving relevance of HE in Bulgaria*

***Challenge 7: The introduction of the protected specialties and priority professional fields demonstrates a strong determination to align the HE offer with the needs of the labour market but this scheme may need to be further underpinned by additional actions***

*Policy options*

- Student engagement – ensure informed choices are made by prospective students including ensuring that this information contains data about the employment prospects of the most looked after specializations in the labour market. Promoting the use of BURS among them can allow for this as students could decide their study choice on the bases of the degrees that are most looked after and better paid and learn about the variety of employment opportunities these choice may lead to.
- Curricula and programmes – systems to update them regularly and in line with current job description needs in the relevant study fields is crucial. The QA methodology for programme accreditation and evaluation could consider the inclusion of criteria that look that this is present in HEI management systems.
- Links with employers – they should be strengthened, and their involvement should move beyond consultations in programme development and organisation of internships to include more direct collaborations for instance in product development or consultancy services. The participation of employers in HEI governing bodies is already included in the HE Act and it referred to in the next section. Box 6 offers a successful case of HEI collaboration at the regional level from where to draw lessons.
- Looking beyond strict alignment between field of study and job – all Subject-specific specialities can provide graduates with a set of transversal skills that enhances their employability across a variety of sectors and occupations. The full transition to competence-based curricula, which seems to be in its

[41] Strategy for Development of Higher Education in Bulgaria (2021-2030).

initial stages, would be essential to adopt an approach that incorporates a focus on learning outcomes and competences. Alignments between discipline and sector of employment can be addressed through the availability of professional training or further education after graduation.

- Implement more frequently the survey component of BURS that gathers graduates employment data – this would generate more up-to-date granular information about the labour market needs and graduates insertion in it, as well as about the latter's professional realisation and use of skills beyond strict alignment between study field and job sector. At the same time, the more granular information that can be collected via surveys can contribute to the development of more nuanced analysis of the employment outcomes of STEM graduates. This can complement the information currently gathered among employers on skills and jobs shortages and used for the LM forecasting conducted by the GoB that underpins the definition of the protected specialties and priority professional fields. Based in these more nuanced and timely analyses that frequently gathered survey that allows for, this and other additional interventions to align HE with economic needs could be more finely tailor-made for the Bulgarian context.

**Box 6. Technocampus, Spain**

Tecnocampus is an affiliated centre of the prestigious Universitat Pompeu Fabra (UPF) Barcelona. The building of Tecnocampus is located in the nearby City of Mataro, formerly a stronghold of textile production. In 1999, the Tecnocampus Foundation was created, through an agreement that incorporated the already established polytechnic and business schools in Mataró. In 2008-2010, as economic reliance on textiles declined, the municipal built the Tecnocampus bulding. A health school was added to the polytechnic and business schools and the university centres then formed the integrated education-business-entrepreneurship design of the campus space.

Tecnocampus is now an ecosystem where students, entrepreneurs, businesses, researchers, academics and local government interact to share knowledge, contribute to regional economic development and build successful futures.

The co-located university faculties, start-up incubator, business park and technological centres, are connected through the common focus on entrepreneurship. A wide range of education, incubation and commercial activities intersect and underpin a modern entrepreneurship scene, led by successful young entrepreneurs, that fuses the Catalan tradition of medium-sized family businesses with the flourishing international spirit of entrepreneurship and innovation.

Tecnocampus governance is a hybrid private non-profit foundation and public ownership model. The Tecnocampus Board is composed of representatives of the quadruple helix: public administration, business, UPF and civil society. The president of the board is a representative of the city council of Mataró. The board includes the General Director of Tecnocampus (Jaume Teodoro), who is directly responsible for the management of the three schools, the Business Park and the incubator. The hybrid Tecnocampus governance model confers strategic and management flexibility beyond that accorded wholly public HEIs in Spain.

Around 120 companies are resident in the Tecnocampus Business Park. The companies present in the Business Park include more than 1,000 staff employed onsite. These companies provide



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mentorship and share their entrepreneurship experiences within the Tecnocampus ecosystem. They can also benefit from the access to and the recruitment of emerging talent and young creators from the student body. The Business Services Department is responsible for the companies in the Business park, the incubator and the transition of successful start-ups to the park.

*Source: www.tecnocampus.cat*



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## Governance and Finance

**In Bulgaria HEIs are mostly public but benefit from a high degree of academic autonomy from the state**. This has strong roots in the history of universities in the country, which first one ("St. Kliment Ohridski" Sofia University) was founded in 1888, ten years after Bulgaria's liberation from Ottoman rule. In the country's process of democratization following 1989, the autonomy of Bulgarian HE institutions (HEIs) was restored and still today the Bulgarian academic community is very proud of their institutional autonomy. The Rectors' Conference and the National Assembly of the Students Councils in Bulgaria are the collective bodies that represent the opinions of HEIs and of their students respectively. [42]

**At present, one of the key functions of the state assumes in the sphere of HE is the approval of the number of study places for each public HEI and per study field.**[43] The NEAA, as explained above, assesses externally and periodically the quality of the programmes offered by the HEIs and their institutional capacity.

**The governance model of public HEIs is predominantly academically-centred.** The main governing bodies at institutional level are the General Assembly, the Academic Council and the Control Council, all of which are dominated by representatives of the academic staff. In this regard, concerns have been raised that the public HEIs are run primarily for the benefit of their faculty, and that management experience is generally not a major factor upon which the appointment of rectors is based[44].

**A 2007 amendment to the HE Act stipulates that each public HEIs should put a Board of Trustees into place.** Establishing a Board of Trustees guarantees the participation of business and local representatives in the process of managing HEIs. A number of subsequent amendments have specified further the composition, appointment procedures and roles of these Board, which at present are defined as shown in Box 7.

**However, in a number of HEIs the functioning of such boards is not yet sufficiently effective in practice.** The SDHE 2021-2030[45] acknowledges this shortcoming and suggests that probably this is due to lack of clear definitions of their role, which prevents them from getting actively involved in the strategic decision-making and implementation.

[42] This section draws on many insights included in Boyadjieva P., Ilieva-Trichkova P. (2018) *ibid*
[43] Number of places are defined using a complex procedure shown here: https://www.mon.bg/upload/21893/pms64_2016_izm31012020.pdf
[44] World Bank (2012) Strengthening HE in Bulgaria, cited in Boyadjieva P., Ilieva-Trichkova P. (2018) *ibid*
[45] SDHE 2021-2030, adopted by CoM.



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**Box 7. The Board of Trustees, key characteristics**

**Composition**
***The Board of Trustees should consist of 8 (eight) members, including:***
- **donors of the HEIs**
- **persons with active public positions**
- **representatives of employers**
- **representatives of professional organisations**
- **representatives of the student council**
- **representative of the relevant municipality**
- **representative of the Minister of Education and Science.**

**Appointment**
**Five of the members of the board of trustees are elected by the Academic Council on the proposal of the rector,**
**Three members are appointed, as it corresponds, by the Student Council, the mayor of the relevant municipality, and the Minister of Education and Science.**

**Main roles:**
**According to the 2020 HEA amendments, the members of the Board of Trustees in public HEIs participate in the Academic Council with the right to vote.**

***They also provide advice on the following:***
- **The development of the HEIs**
- **Action plans proposal**
- **Budget proposals**
- **Proposals for the adoption, amendment and supplement of the HEIs regulations**
- **Proposals for the number of students to be admitted and for the cost of student fees**
- **Proposals for establishment of scholarships by the higher school**
- **Proposals for updating the curricula and programmes submitted by representatives of employers**
- **Various annual reports, including HEI's financial reports**

***Source: Higher Education Act***

**Annual public expenditure on tertiary education as a percentage of GDP remains low in Bulgaria.** In 2014, half of the countries in the EHEA had spent more than 1.2 percent of their GDP on tertiary education. The three countries with the highest spending were Denmark (2.3 %), Norway (2.2 %) and Finland (2 %).[46] Bulgaria's expenditure instead was around 0.6 percent of their GDP in that year (Figure 25). Expenditure as a percentage of GDP continues to be low when compared with other EU member states (Figure 27) and despite a modest increase in 2017, a slightly decreasing trend emerges for the 10 years period between 2007 and 2017 (Figure 27).

[46] Bologna Process Implementation Report 2018, *ibid*



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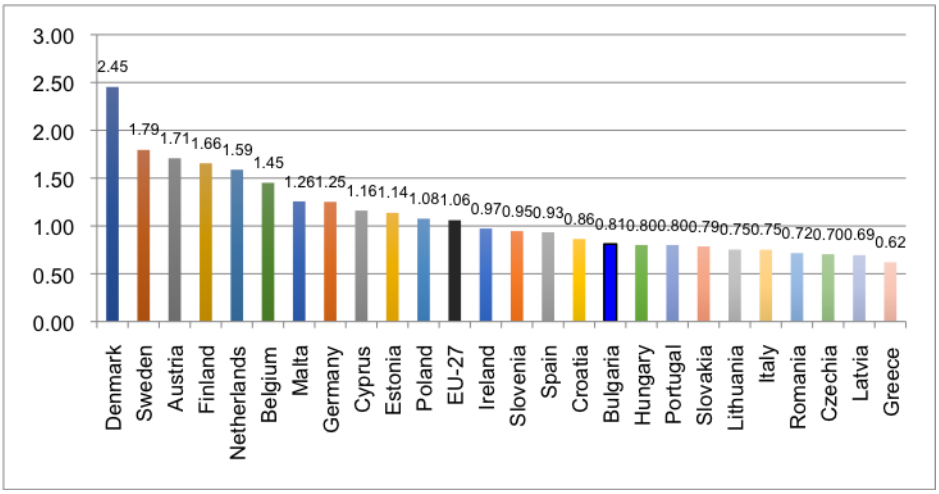
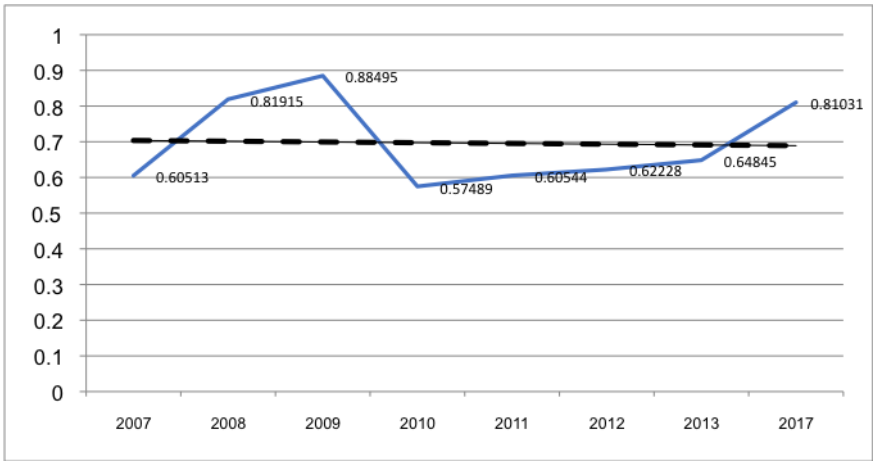
**In addition, Bulgaria is among the EHEA countries that spend the least on research and development.** Bulgaria spent 0.03 percent of their GDP in research and development in 2014. Only Romania in the EHEA spent less, 0.01 percent. Bulgaria and Romania spend 4.3 % and 1.5 % respectively on R&D as a share of total tertiary education spending in that year. At the other end of the spectrum was Portugal that spent 53 percent of the tertiary education budget in research and development.[47] While these data needs updating, offers a good picture of the situation in the past decade.

**Figure 25. Government expenditure in Tertiary Education as a % of GDP, 2017**




*Source: Eurostat*

**Figure 26. Evolution of government expenditure in Tertiary Education as a % of GDP in Bulgaria**




*Source: Eurostat, Note that data for 2014-2016 is not available*

[47] Bologna Process Implementation Report 2018, *ibid*



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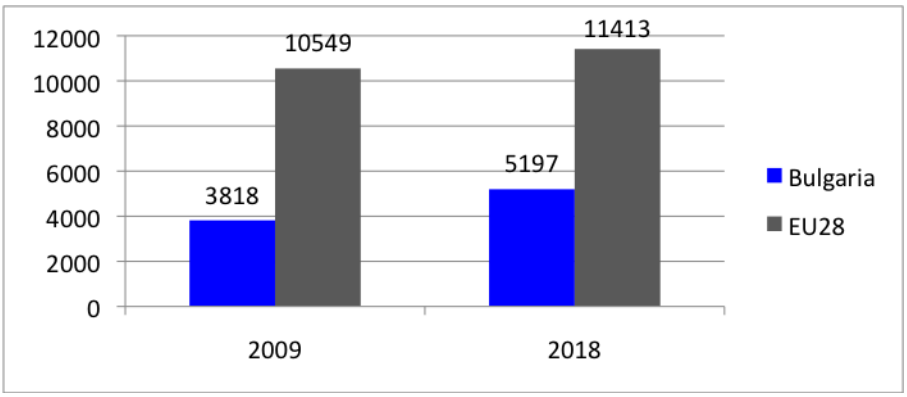
**Figure 27. Government expenditure per student in tertiary education**




*Source: Education and Training Monitor (2019), Bulgaria*

**However, expenditure per student at tertiary level has increased in recent years.** Expenditure in education per students has increased at all levels of education in Bulgaria, despite overall decreases of expenditure as a percentage of the GDP. Expenditure per student at the tertiary level has been increasing the most in the past 10 years (Figure 27). This reflects the lowering of the population size in the country and, especially, the decreases in the numbers of enrolments at this level of education indicated earlier.

**Financial support for HE in Bulgaria comes from public funds, which are composed of national state funds and EU funds mostly, and from private sources.** Private sources include donations, grants and projects from abroad, rents revenues, consulting services or other commercial activities as well as students' fees. The latter represent the largest share among the private sources. Public HEIs autonomously decide how to spend all their resources disregarding their source. Private HEIs receive at present 3 BGN per student for Sports activities.

**Public and private expenditure in higher education as compared to the total expenditure in education in the country has remained relatively stable since 2000 and in absolute terms this expenditure increased significantly since then.** Since 2000 the share of public and private expenditure in HE in the total expenditure in education in Bulgaria has remained above 31 percent and on average represented 32.5 percent of the expenditure of education. The exceptions were the years between 2004 and 2007, when it was slightly below 31 percent, and the years that followed the 2008 financial crisis, when it fell below 30 percent and remained below 31 percent until 2014. In absolute terms expenditure in higher education also decreased in the years that followed the financial crisis but the general trend for the past two decades has been a significant increase as public and private expenditure in HE has more than tripled since 2000.



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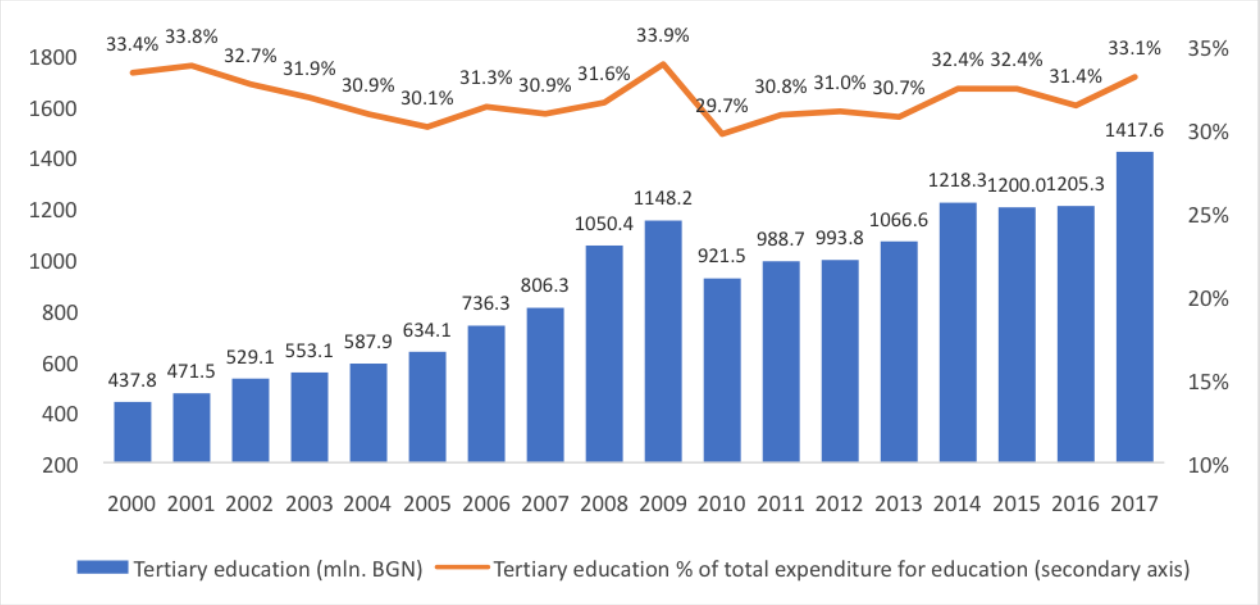
**Figure 28. Public and private expenditure for tertiary education of total expenditure for education (mln. BGN and %)**




*Source: NSI*

**Regarding tuition fees, these have been introduced in the 1990s in Bulgaria.** The number of students approved by the state for each programme and HEI includes a group that will be financed by the state and another one that will pay their fees privately. In addition, universities can accept students beyond the places approved by the state if they have received high grades in their institutional or programme accreditations.[48] All students pay an administrative fee, but those approved by the state for fee-paying places and the extra ones that universities with high QA grades can accept, pay higher fees. HEIs have autonomy to decide their fee levels, but government defines a limit of the maximum cost of fees that can be charged. Tuition fees costs vary depending on the programme and field of study – social sciences tend to have the lowest fees, where medicine programmes have the highest. At present values the fees for a Bachelor degree at public universities for regular (full time) students may vary from EUR 270 to EUR 870. Since the academic 2020/2021 year students in list of protected specialties and priority professional fields adopted by the Council of Ministers pay no tuition fees (they are covered by the state).

**Scholarships, grants and loans are available for HE students. The state provides scholarships for full-time students** that can be needs-based (decided according to monthly income per family member) or merit-based. HEIs also have autonomy to decide how to distribute these state-budget scholarships among their students but it is not clear if the selection processes are transparent and open to public scrutiny. In addition, there have been grants provided by the EU since the previous financing period.

[48] Public HEIs or faculties which have received an assessment of 8.00 to 10.00 in their institutional or programmes' accreditation, have the right to enrol students that pay private fees places and charge them higher fees than those paid by students with state subsidized placed. Yet, universities and faculties that received a grade between 8.00 to 8.99 cannot accept more than 5 per cent of the total numbers of state approved places and those that received 9.00 to 10, not more than 10 percent.



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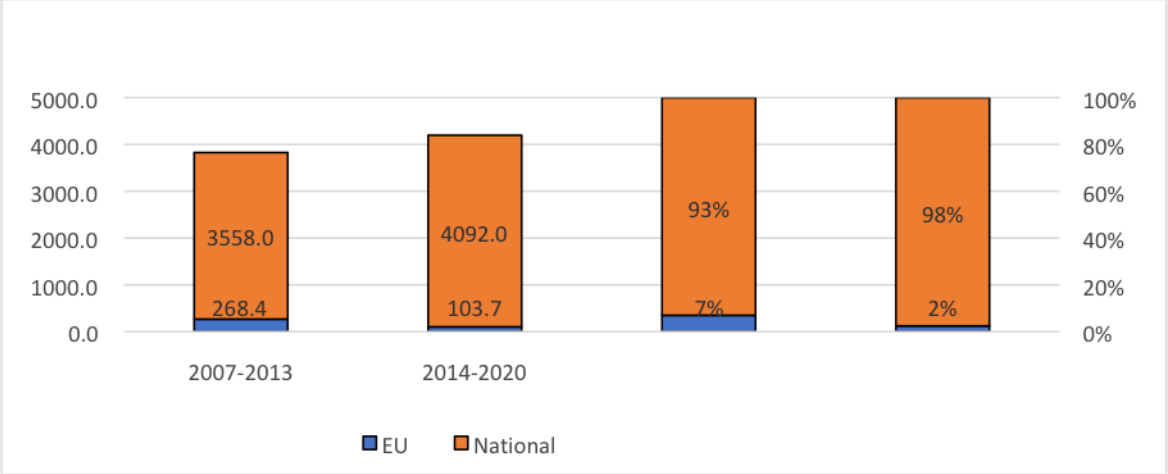
**A recent report from the Bulgarian National Audit Office refers to lack of transparency in the process of allocating students' scholarships.**[49] In 2016, 12.2 percent of full-time students received them.[50] Since 2010 a student loan scheme is also available for HE students. These loans are provided at the lowest interest rate on the market with no additional costs. They also have a grace period for repayment of up to 1 year after graduation and annual repayments over a 10-year period. All students – both in public and in private HEIs – can apply.

**As per public expenditure, the main source of financing for HE in the period 2007-2013 and 2014-2020 is the national budget.** According to the calculations reflected in Figure 29, national budget funds financed the vast majority of the expenditure in HE since 2007. In the current financing period, it constitutes 98 percent of the funds and it was 93 percent in the previous one, while the ESIF funds covered for the rest of the investments. Overall, although the programming period 2014-2020 is still under implementation, and money can be spent until 2023, there is still possibility of the current EU expenditure to reach the level of that of the previous financing period.

**Figure 29. Financing of HE 2007-2013 and 2014-2020 by source of financing, mln. BGN and % of total financing**




*Sources: National Budget reports of Republic of Bulgaria, for the period 2007-2020, Reports on the implementation of the policies and programmes of the MES, for the period 2007-2020, Unified management information system for the EU structural instruments in Bulgaria 2007-2013, Information system for management and monitoring of EU funds in Bulgaria 2014-2020 (data by September 2020)*

**Investment in HE from national funds represents mostly MES transfers to universities for their operational costs.** As shown in Figure 30, almost 90 percent of the total of the national funds invested in HE – that is excluding ESIF funds – are allocated to HEIs for these purposes, which include salaries and general maintenance costs. When compared to the previous financing period, expenditure in operational costs for universities increased in the current period while investment in

[49] Bulgarian National Audit Office, 2018 Report, p. 15-16.
[50] European Commission/EACEA/ Eurydice 2017, p. 27, cited in Boyadjieva P., Ilieva-Trichkova P. (2018) *ibid*



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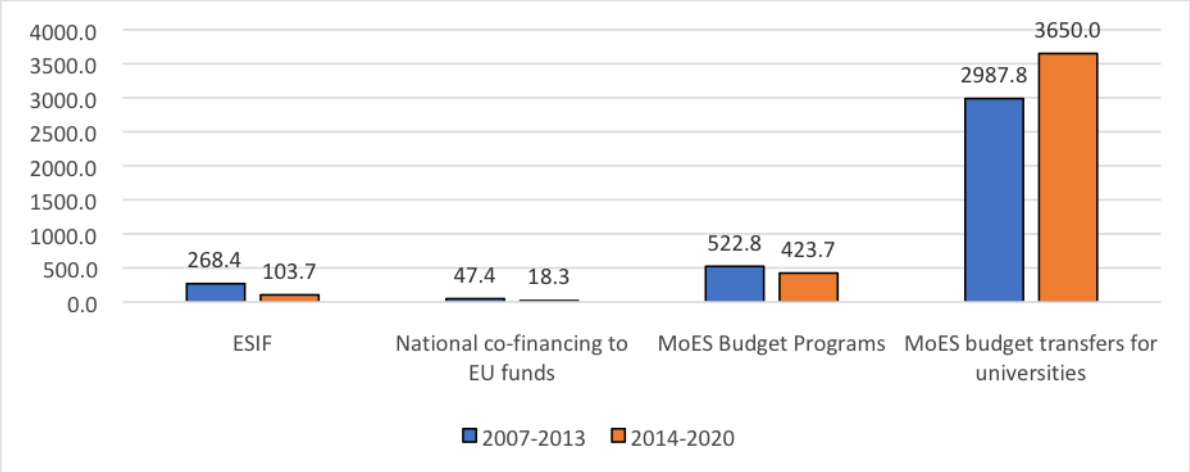
budget programmes, also known as policy development financing and are the means whereby the government puts in practice its strategic priorities, decreased.

**The EU funds for HE also decreased from 2007-2013 to 2014-2020.** This reflects a strong investment of ESIF in priority axis 1 of the OPSESG, research and technological development, which were allocated to the creation of Centres of Competence and Centres of Excellence, and which are not included in this analysis. Also, for the programming period 2014-2020 less money was allocated for students' scholarships while money increased for university students' internships. Unlike the 2007-2014 period, no investment for improving equipment and technological systems in HEIs were included in the OPSESG and funds for Support for the development of PhDs, post PhDs, young scientists and researchers were reduced. (Figure 31)

**Figure 30. Public expenditure in HE by type of source (mln. BGN)**




*Sources: National Budget reports of Republic of Bulgaria, for the period 2007-2020, Reports on the implementation of the policies and programmes of the MES, for the period 2007-2020, Unified management information system for the EU structural instruments in Bulgaria 2007-2013, Information system for management and monitoring of EU funds in Bulgaria 2014-2020 (data by September 2020)*



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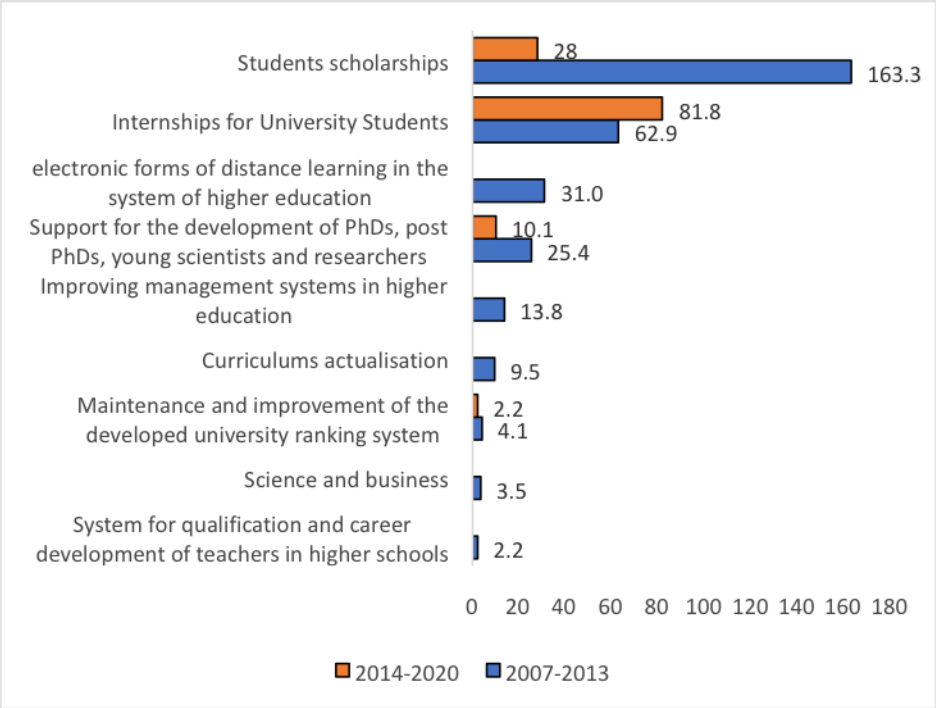
**Figure 31. Type of measures financed, ESIF 2007-2013 and 2014-2020 (EU and National co-financing to EU funds) mln. BGN**




*Sources: Unified management information system for the EU structural instruments in Bulgaria 2007-2013, Information system for management and monitoring of EU funds in Bulgaria 2014-2020 (data by September 2020)*

**Policy development financing is managed by MES through five national budget programmes organised in the main policy areas under the MES responsibility.** As shown in Figure 29, they represented less than 10 percent of the total pubic investment in HE in the country. The expenditure in each of these budget programmes is presented in Figure 32. All these budget programmes increased their financing for 2014-2020, but four budget programmes from 2007-2013 period were closed, which explains why, overall, national budget expenditure in policy development financing decreased in the current financial period.

**An emphasis on improving the quality of HE with a focus on enhancing the quality of research emerges clearly from a comparative analysis of the investments made for national budget programmes in 2014-2020.** The coordinated approach to increase quality in HE that emerged from the policy analysis in the previous sections, mainly in terms of increasing relevance of the sector for the labour market and of better research outcomes – especially seen in the change in the funding formula but also in the definition of priority professional fields –, is paralleled in financial terms with a marked increase in the budget programme related to research and the development of sustainable relations between education-science and business. While the funds for all of the budget programmes that were maintained from 2007-2013 to 2014-2020 increased, in the case of the research budget programme ("Assessment and development…"), the funds were increased more than six times, from 29.81mln BGN to 183.16 mln BGN.



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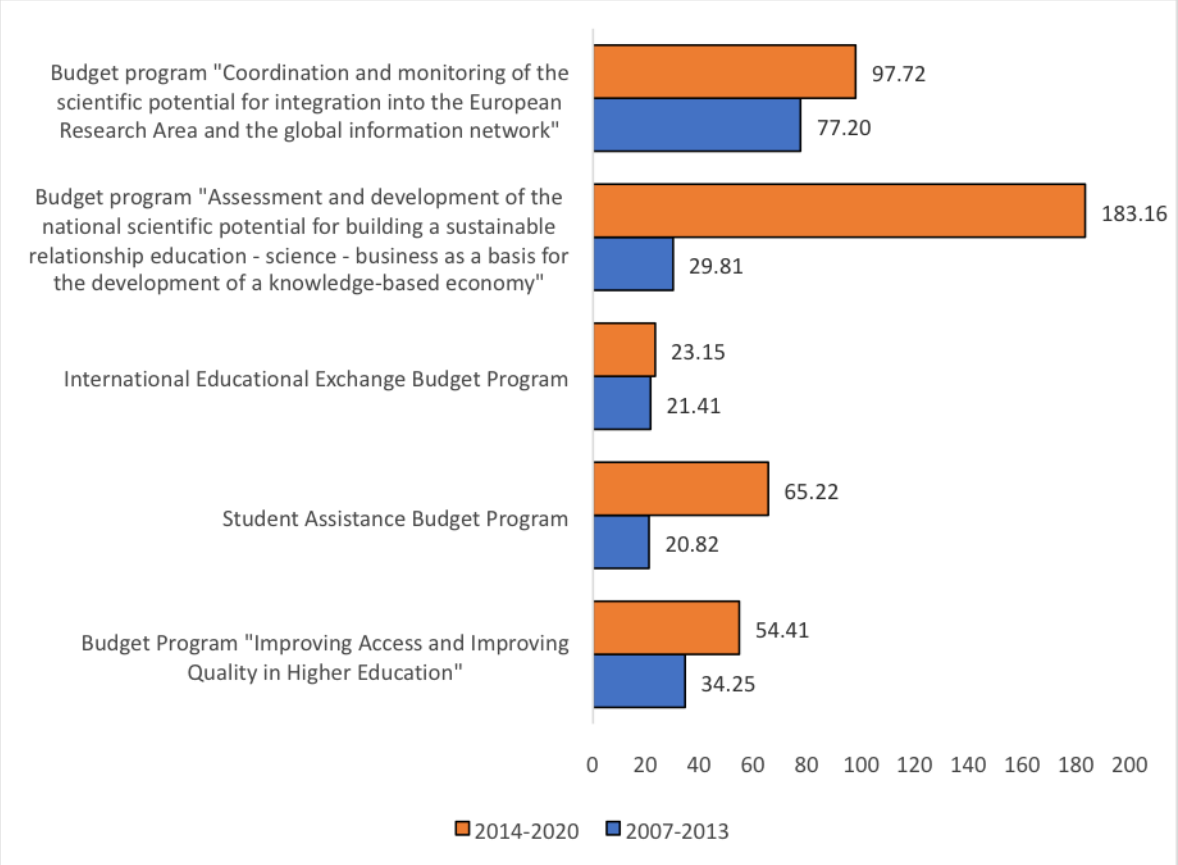
**Figure 32. Financing through national budget programmes, 2007-2013 and 2014-2020, mln. BGN**




*Sources: Sources: Reports on the implementation of the policies and programmes of the MES, 2007, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020*

## Summary of key recommendations and next steps

**This report has presented a situation analysis of the HE sector in Bulgaria with the objective of identifying key challenges and possible policy options.** In this analysis and the recommendations proposed the report has taken into account the policy priorities identified in the SDHE 2021-2030. The sections and policy options presented were organised along the axes of access and equity, quality of teaching and research, relevance, and governance and finance. The challenges were organised in a way that they could incorporate related challenges and proposals for action.

**In terms of *the HE system,* two key challenges were identified:**

***Challenge 1: to address the fragmentation of the system keeping a balance between quality and flexibility so the system can adapt to changes in the contexts and in students' preferences.***



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***Challenge 2: To ensure that strategic action planning builds on lessons learnt***

**The key recommendations regarding policy options to explore with the aim of addressing these challenges were:**

- ✓ Building on the requirement to map the HE sector set in the HEA included in the SDHE 2021-2030, and to conduct this exercise drawing on information from the NEAA and the BURS
- ✓ Make the map geo-referenced and make it an information tool for prospective students complementary to BURS.
- ✓ For the purposes of harmonization, the mapping should be complemented with regional development information and students' profile data.
- ✓ In strategic action planning build in an **assessment of results** that identifies obstacles encountered to achieve the objectives set out in the previous strategy for the sector.
- ✓ The use of theories of change is recommended for the process of planning measures and interventions.

**Regarding *access and equity in HE*, two other key challenges were identified:**

***Challenge 3: Despite positive enrolment rates, the decrease in the number of students represents a challenge for the increasing demands for high skilled labour force.***

***Challenge 4: Efforts to ensure quality in a system that expanded and diversified rapidly as a response to decreasing enrolments may affect the provision of HE for different students' populations.***

**The key recommendations regarding policy options to explore with the aim of addressing these challenges were:**

- ✓ To adopt a multidimensional strategy to encourage and widen participation in HE that targets adequately the less represented sectors of the population in HE and does so from different angles of actions.
- ✓ To conduct a detailed analysis of the characteristics of those excluded from access to HE in order to identifying barriers and needs of these sectors and thus design the most appropriate tools to reach them and engage them in HE participation.
- ✓ To support vulnerable groups' addressing not only financial barriers, but also lack of motivation and guidance as well as disadvantages derived from low quality in pre-university education that may affect more sectors living in more marginalised regions, adopting, for instance, state-funded programmes for targeted remedial classes or an entry model that takes into account the position of candidates in the rankings of their own localities or schools.
- ✓ To ensure pastoral support is available for students from non-traditional backgrounds, including mature students, for instance, once they are enrolled in university.
- ✓ Widen the offer of programmes designed to be delivered other than in the regular format of full-time attendance.
- ✓ Linked to the plans and recommendations regarding the creation of a map of the HE sector, to create a system for the classification of HEIs based on empirical evidence of their actions and profile that will allow a rationalisation of the programmatic offer in ways that can ensure all sectors that wish to attend universities face no barriers to do so.

**As for quality of teaching and learning and of research in HE, these were the challenges identified:**



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***Challenge 5: Deficits in key tools to assess and measure quality of HE, especially regarding the QA agency current methodology and the incomplete exploitation of BURS' features.***

***Challenge 6: insufficient impact of Bulgarian university's research in the scientific community and the economy can be partly addressed by designing a system of "research universities", but the details of this proposal have not been yet fully defined.***

**The key recommendations regarding policy options to explore with the aim of addressing these challenges were:**

- ✓ **Defining roles and synergies across these the NEAA and the BURS so w**hile BURS focuses in outcomes, including of research and learning (in the form of employment outcomes) as well as in the form of students' satisfaction, NEAA's focus is on the provision, including infrastructure and teaching resources, as well as contents and delivery.
- ✓ To combine the introduction of quantitative indicators for QA assessments, including the establishment of benchmarks according to different types of universities, for instance, while in parallel conduction the assessment of teaching and learning using of approaches that take into account the importance of subject's assessments to be able to grasp the complexity of the topic in a holistic manner.
- ✓ To provide the necessary funds to ensure the inclusion of foreign experts in QA assessment panels.
- ✓ To conduct an open multi-stakeholder consultation on the current NEAA methodology.
- ✓ The BURS could enhance the system by incorporating a graduates' outcome tracer component especially a model that combines this survey with employers' surveys.
- ✓ To increase the use of BURS by proactive students as an information tool which can be attempted via partnerships with employers, students' videos reviewing, the introduction of a CV database for job searches, or the integration of a geo-reference map as mentioned earlier.
- ✓ Regarding the adoption of indicators and methodology to decide which universities can be defined as "research universities", the proposal is to conduct a thorough review of the system using BURS data and decide on different groups of universities, taking into account their distinctive profiles in a way that other attributes apart from research profile are valued. This is in line with the classification proposed earlier.
- ✓ To evaluate the implications of funding decisions to be based on this categorization of universities as they may discourage research and innovation in some universities.

**One more challenge was identified, and this regards the *relevance of HE* for society and the labour markets**

***Challenge 7: The introduction of the protected specialties and priority professional fields demonstrates a strong determination to align the HE offer with the needs of the labour market but this scheme may need to be further underpinned by additional actions***

**The key recommendations regarding policy options to explore with the aim of addressing these challenges were:**



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- ✓ To ensure prospective students make informed choices and that in their considerations they include assessments of data about the employment prospects of the most looked after specializations in the labour market.
- ✓ To emphasise the importance of keeping curricula and teaching methods up-to-date by ensuring that HEIs systems keep track of this.
- ✓ To strengthened links with employers beyond consultations in programme development and organisation of internships to include more direct collaborations for instance in product development or consultancy services.
- ✓ To look beyond strict alignment between field of study and job in evaluations of the relevance of HE for the labour market as specialities can provide graduates with a set of transversal skills that enhances their employability across a variety of sectors and occupations. The full transition to competence-based curricula would be essential to mainstream this approach.
- ✓ To Implement more frequently the survey component of BURS that gathers data on graduates employment – this would allow for more timely information in labour market developments, analyses that look at graduates professional realisation beyond strict alignment between study field and job sector, and more nuanced analysis of the employment outcomes of STEM graduates. Based in the more nuanced and timely analyses that frequently gathered survey data that allows for, interventions to align HE with economic needs could be more finely tailor-made for the Bulgarian context.



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