Republic of Croatia
Croatia--RAS Higher Ed Finance Reforms
Expanding Performance-Based Funding in Higher Education: Institutional Roadmaps

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Assistance to the Ministry of Science, Education and Sports
for Higher Education Finance Reform

Expanding
Performance-Based Funding in Higher Education:
Institutional Roadmap—Institute of Physics

February 2017

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<th>Abbreviation</th>
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<td>ADP</td>
<td>Academic Development Proposals</td>
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| AMI          | Institutional Improvement Agreements  
(un Acuerdo de Mejoramiento Institucional) |
| ECTS         | European Credit Transfer and Accumulation System |
| EUA          | European University Association |
| FTE          | Full-Time Equivalent |
| HEI(s)       | Higher Education Institution(s) |
| ISVU         | Higher Education Institutions Information System |
| MoF          | Ministry of Finance |
| MSES         | Ministry of Science, Education, and Sports |
| M&E          | Monitoring and Evaluation |
| PA(s)        | Performance Agreement(s) |
| PBA          | Performance-Based Agreement |
| PBF          | Performance-Based Funding/Financing |
| PMI          | Institutional Improvement Plan  
(un Plan de Mejoramiento Institucional) |
| PRFS         | Performance and Role-Related Funding Scheme |
| RAS          | Reimbursable Advisory Services |
| STEM         | Science, Technology, Engineering, and Mathematics |
| TA           | Technical Assistance |
| UCP          | Project Coordinating Unit |
| UGC          | University Grants Commission |
| WB           | World Bank |
Executive Summary

1. This report is the culmination of a year-long evaluation of the Croatian higher education sector’s readiness to expand the funding practices of the universities and research institutes to include greater levels of performance-based funding. Having gone through the pilot experience of the preliminary performance agreements of 2012-2015, both the institutions and the Ministry of Science, Education, and Sports (MSES) had deep insights in what they understood were the strengths and challenges of those agreements for their own organizations. The World Bank team sought to explore those localized experiences in the context of the global experiences with similar funding norms, to provide useful and relevant information about how to move forward with performance-based funding in Croatian higher education.¹

2. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

3. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university and research institute costs as well as student tuition at universities should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

   - the government’s funding limitations imposed by the country’s low economic growth;
   - the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

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1 For a sector-wide review of the preparedness of the all universities and the Institute of Physics to utilize expanded performance-based funding, please see the “Final Report on Institutional Readiness for Expanded Performance-Based Funding in Higher Education” (September 2016).
the relationship between the MSES and the institutions particularly in regard to personnel practices.

4. Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging. Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated.

5. Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF. These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.

6. A consistent willingness to engage in this process on the part of both MSES Representatives and university leaders has been vital for continued commitment to meet, discuss, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

7. Following a section that briefly highlights some of the most relevant global experiences with performance-based funding, the report presents the evaluation outcomes for the Institute of Physics. The institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with university and research institute leaders—through site visits, collective workshops, and self-assessments.
completed by the leadership teams. The findings from the Institute of Physics focus on two (2) key areas of institutional governance:

- Leadership and Strategic Planning
- Fiscal Management

8. The Institute of Physics’ more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements concludes the report. The roadmap includes options for addressing any identified challenges. Each roadmap includes recommendations across the two areas of institutional governance for the following time periods: (i) short-term (October 2016 – July 2017); (ii) medium-term (August 2017-July 2018); and (iii) long-term (August 2018 – onwards).

9. The road ahead is promising for expanding performance agreements to promote innovation and efficiency in Croatian higher education. All stakeholders identify important benefits from elements of the pilot and these elements can be further embedded in the funding policies in the future. Likewise, all stakeholders expressed some frustrations and challenges from the pilot, and understanding and addressing those will prove vital to successful implementation PBF in Croatia during the next rounds. This report serves to illustrate both what has worked and what needs reform, in order to lay the foundation for even more effective utilization of PBF and to maintain constructive partnerships between the higher education sector and the MSES.
Introduction

10. **Croatia’s education reforms in recent years have covered many aspects of the system, ranging from preschool to university.** The most recent education strategy – the Strategy for Education, Science, and Technology – was adopted in 2014, with a focus on reforming the education and training system. These areas of reform account for Croatia’s adverse demographic conditions of an aging and shrinking population and geographic characteristics, among others. According to the Strategy, education and science are the focal points of Croatia’s development plans.

11. **Demographic decline, aging, and lost years of employment remain significant barriers to growth in Croatia.** As the recovery from the lengthy recession continues, Croatia’s growth prospects remain vulnerable to adverse demographic trends. For Croatian living standards to converge with its Western European neighbors, the labor force must be more productive and become more flexible in a rapidly changing labor market, where the employment participation rate has experienced a downward trend since 2008. These challenges prompt the need to balance policy reforms in education and training, and the broader economy, in a constrained budgetary environment.

12. **In addition to demographic decline and aging, years of lost employment is also a significant problem for Croatia.** Among 25-34 year-olds, 35-44 year-olds, and 45-54 year olds, the average Croatian spends three years in unemployment or inactivity. This number doubles among 55-64 year olds. Among women, the average female in Croatia spends 17 years of her working life in unemployment or inactivity. This compares unfavorably with other European Union (EU) countries (Figure 1).

**Figure 1. Average years of lost employment for an individual, circa 2010**
13. **These adverse population trends have current and long-term implications for Croatia’s human capital and macroeconomic agenda to promote employment and sustainable economic reforms.** Human capital remains critical to Croatia’s service sector which dominates the country’s employment landscape.

14. **Croatia’s lack of economic growth in recent years is reflected in low labor productivity.** In addition to expanding employment by increasing the employment rate and the working life of individuals, productivity gains are central to addressing demographic decline and aging. While many European neighbors experienced low, but positive growth in productivity relative to the United States, Croatia’s productivity declined significantly (Figure 2), and now lags many EU countries.

**Figure 2. Productivity Levels in Europe compared to the United States**
15. **Croatia’s education system faces many challenges.** The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

16. **The implementation of performance-based funding (PBF) in higher education is a growing global trend as countries face persistent budgetary pressures in education and across their fiscal obligations.** In countries where the majority of higher education institutions (HEIs) receive public funding, PBF is a recognized tool to implement more efficient and adaptive funding norms. Moreover, PBF can help to achieve improved quality and relevance, research excellence, and better accountability and autonomy, among others important outcomes of finance reform. PBF allows for flexibility in selecting appropriate indicators to achieve wide-ranging goals.

17. **In 2010, the World Bank (WB) launched a regional higher education program to provide technical assistance (TA) to selected European and Central Asian countries.** The program was designed and executed to deliver quality TA through knowledge products, capacity-building workshops, and policy advice in higher education. In the case of Croatia and at the behest of the Ministry of Science, Education, and Sports (MSES), the engagement centered on two main tasks: (i) financing mechanisms for higher education, and (2) an independent assessment of the University of Zagreb by the European University Association (EUA).

18. **In 2013, the WB’s involvement in Croatia’s higher education sector expanded with a request from the Ministry of Science, Education and Sports (MSES) to provide (reimbursable) advisory services (RAS) in higher education.** After a period of project design and consultation, the RAS became effective in May 2015. The ongoing advisory services focus specifically on improving the capacity of universities and research institutes to effectively implement more comprehensive performance-based contracts within the higher education system of Croatia.

19. **The role of the World Bank team in these advisory services has been to:**

- provide technical expertise in evaluating global perspectives related to performance-based funding (PBF) in tertiary education, including knowledge of legislative frameworks and governance norms necessary for effective implementation of PBF models for university budgeting; and
serve as a neutral intermediary in identifying the challenges each selected institution would face in meeting the minimum criteria for enacting and managing broader use of performance-based funding in their operational budgets, and targeting directed support at 5 selected institutions (4 universities and 1 research institute) to promote meeting the minimum requirements as established by the collaboration between tertiary stakeholders and the government.

20. To perform its role under these advisory services, the WB has prepared the following three outputs:

- a comparative assessment of the PBF pilot in Croatia, utilizing international examples, with recommendations for improving the next round of PBF for the targeted institutions;
- a report detailing the assessment of all seven public universities and one public research institute (selected by the MSES), including shared challenges, overlapping and/or distinct issues, annexes with individual campus evaluations of impediments to the institutions’ ability to meet the minimal criteria and recommendations for reforms;
- an assessment of the legislative context for higher education finance and recommendations for reforms.

Timeline of Performance-Based Funding in Croatia

Workshops (2011)

21. To perform its role under these advisory services, the WB has prepared the following three outputs: The first workshop on PBF was held in February 2011. The WB and the MSES organized this workshop for Croatian universities focused on PBF and the European experience with PBF.

22. In July 2011, a second workshop was organized. This workshop focused on the testing and implementation of funding/performance agreements which was co-convened by the MSES and the WB. The workshop targeted the leadership of most public universities in Croatia, and all participants agreed to proceed with the proposed model of funding agreements as a basis for future budget allocations. There was widespread belief that the proposed changes to a performance-based system addressed the existing challenges in Croatian higher education. Many of the proposed changes in higher education, however, proved to be unpopular. The proposed reforms were directed to the Croatian Parliament for discussion, but higher education stakeholders asked for the proposals to be withdrawn. The proposed reforms were not passed.
Bilateral Contracts (2012-2015)

23. Building on the work of the regional technical assistance program, PBF was introduced in Croatia’s higher education system in 2012. Three-year bilateral contracts were the instruments used for PBF. The MSES entered into these contracts with each of the country’s eight (8) public universities.

24. The 2012-2015 performance-funding contracts included the provision that the MSES would subsidize full-time university students throughout the three-year time period. Further, each university would adopt mandatory performance measures provided by MSES, as well as adopt performance measures selected by the universities (and research institutes where applicable). The list of mandatory MSES performance measures included:

- Increasing the number of students with disabilities;
- Increasing the number of students aged 25 and over;
- Increasing the number of students from lower socio-economic backgrounds;
- Increasing the number of graduates from science, technology, engineering, and math (STEM) fields;

Interim Bilateral Contracts (2015)

25. Interim contracts were also signed in 2015 to ensure budget continuity, while broader and more substantive agreements were considered and agreed. These reforms aimed to maximize the quality and accessibility of the higher education system. Full funding agreements will be implemented in another phase of reforms. The transition to PBF in Croatia coincides with the unforeseen implications of introducing two new public universities into the sector and anticipated fiscal challenges across the total national budget.

The Croatian Experience with Performance-Based Funding

26. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university costs as well as student tuition should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:
• the government’s funding limitations imposed by the country’s low economic growth;
• the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and
• the role of institutional autonomy with regard to relationship between the MSES and the institutions around issues of institutional management, including personnel practices and use of self-generated income.

27. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration between the institutions and MSES, and support from MSES over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated. Finally, three significant changes in the national government over the past few years—since PBF was introduced—have meant parallel changes in MSES leadership resulting in uneven forward movement. The explicit and detailed findings related to the practical implications of these challenges for future reforms are detailed in the institution-specific sections below.

28. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

• Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
• Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
• Collecting and using data more deliberately and effectively; and
• Increasing efficiencies and developing additional revenue streams.

29. **A consistent willingness from both MSES Representatives and university/research institute leaders to pursue collaborative reforms has been vital for continued commitment to meet, discuss, and debate PBF and related issues.** Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and
meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

30. The following institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with institutional leaders—through site visits, collective workshops, and self-assessments completed by the leadership teams. The findings focus on two (2) key areas of institutional governance: leadership and strategic planning, and fiscal management. Each institution has received a more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements. The following section presents the findings and roadmap for addressing institutional challenges at the Institute of Physics.

The Institute of Physics

31. The Institute of Physics (Institute) was founded in 1960 by the University of Zagreb with the purpose of providing an environment for scientific research for the University. In 1993, by the Act of the Government, the Institute became a public scientific institute owned by the Republic of Croatia without particular affiliation to the University of Zagreb.

32. The Institute conducts scientific research in the field of physics and related interdisciplinary areas. In addition to its research mission, the Institute generates research applications and knowledge transfer through innovation. The Institute also collaborates with national universities and popularizes physics and sciences education. The Institute is the only organization in Croatia that systematically performs experimental research in surface physics, investigates particular aspects of electronic, magnetic and transport properties of materials, plasma physics, atomic physics and optics, interferometry and holography. It is also the only institution in Croatia which hosts several large laser systems. In addition, the Institute is the sole producer and supplier of liquid helium for the scientific community in Croatia.

33. Total income for the Institute has decreased over the past five years from approximately 21 million HRK in 2011 to 17 million HRK in 2015 – a decline of almost 20 percent. This reduction is mainly attributed to decreases in the budget provided by MSES. The Institute of Physics is located in Zagreb and employs approximately 36 full-time research scientists, 26 technical and administrative staff, and 17 doctoral students.

Experience with Performance-Based Funding
34. The Institute signed a three-year contract with MSES to engage in a PBF model for the years 2013, 2014, and 2015. The core element of this plan was that the Institute would distribute an additional 500,000 HRK (approximately €66,600) in discretionary funding according to the performance and activities of its researchers in contrast to dividing the sum equally among researchers. This amount was in addition to base funding from the State. The key indicators agreed upon to measure performance include:

- number of papers published in leading international journals;
- number of citations; and
- number of students working towards PhDs.

35. The Institute used the majority of its funding to pay for a subscription to a physics journal at a cost of 200,000 HRK. In 2000, the Institute received 1 million HRK for journals but, currently, receives no State funding for journal subscriptions. The Institute also used the funding to increase its researchers’ participation in conferences, and to advance various projects, including improvements to the Institute’s information technology network. The Institute notes an improvement in the quality of journals in which Institute members published and the number of citations increased. Further, the Institute noted that during this time period, MSES adjusted its policy to require that institutions cover the overhead costs of externally funded projects. These costs range typically from typically 10 – 15 percent of a project’s budget. As a result, the Institute used some of its PBF allocation to cover this unforeseen expense.

36. The Institute reported that the funding amount was reduced by 25 percent to 400,000 HRK despite improved performance. The Institute believes that the amount was reduced because the process the MSES utilized to award the four other natural science institutes and the University of Zagreb’s Physics faculty gave an unfair advantage to the larger entities.

**Strengths**

37. According to its most recent self-evaluation in the reaccreditation process by the Accreditation Agency for Science and Higher Education, the Institute noted a number of significant changes and achievements in the past several years. The main achievements include:

- the adoption of new protocol on preparing and managing projects and on recording and storing scientific papers;
- advances on the area of intellectual property protection; and
- increasing private investment in the preparation of infrastructure projects.
38. The Institute adopted a strategic plan at the end of 2012 to guide its work from the period of 2013 to 2017. The main strategic areas include research, technology, education, and impact on society. Each of the four strategic areas includes specific goals to be achieved. The implementation of the strategic plan is monitored regularly on several levels requiring all researchers and the Director to formally report on their achievements on an annual basis.

Challenges

39. The Institute expressed deep concerns about the lack of consistency and sustainability of its funding sources. While the Institute continues to seek out new funding streams, and is applying to external European funding sources for two major upcoming projects, its biggest concern is related to personnel. The Institute has MSES permission to hire more researchers but they face a weak candidate pool because it is difficult to attract and retain high-level researchers. They cannot compete with the salaries and benefits offered in other countries and do not have a system in Croatia to support post-doctoral fellows.

Recommendations for the Institute of Physics

40. The WB Team was encouraged by the Institute’s willingness to participate in a PBF contract with MSES and to identify key performance measures. In reviewing key readiness areas and evidence for continued and improved involvement, the WB Team makes the following recommendations to the Institute:

I. Leadership and Strategic Planning

- Short-term leadership and strategic planning recommendations (October 2016 – July 2017)
  
  - Convene an Institute working group to oversee the activities related to the adoption and implementation of performance contracts and report regularly on the progress of the Institute regarding the performance contracts. The working group should include academic/research, administrative, and student representation from across the Institute. Focused on the three main areas of institutional readiness related to performance funding—leadership, fiscal systems, and data—the working group should immediately:
    - identify its membership,
    - draft its charter, roles and responsibilities; and
    - develop a project plan with timelines, key tasks, and responsible parties utilizing the following recommendations as a guide.
• **Review national higher education planning reports** including the Strategy for Science, Education, and Technology (2014-2020), the Smart Specialization Strategy (2016) and the Croatian Innovation Strategy (2014) to determine if and how the Institute’s existing strategic plan aligns with recently adopted national priorities.

• **Prepare a list of 3-4 institution-specific key performance indicators** which have transparent and clear measures for review and negotiation with MSES as the basis for the overall application of PBF at the Institute.

• **Ensure that the Institute-wide strategic plan is adopted across the Institute by all parties and clearly specifies performance measures and goals in alignment with MSES priorities.** The current plan does not appear to include specific goals the Institute is seeking to accomplish in regard to scientific productivity such as the number of published journal articles, the number of patents, or the number of presentations at international conferences.

• **Mid-term Leadership and Strategic Planning Recommendations (August 2017 – July 2018)**

  • Publish on the Institute’s website an easy-to-read and accessible summary outlining its PBF goals and the annual results in reaching these goals.

  • Collaborate regularly with other research institutes and the MSES to share best practices, address concerns and issues, and assess the implementation of PBF through ongoing and open communications, which will be the cornerstone of effective PBF.

  • Organize meetings (at least two, to build upon progress) to share best practices with other research institutes in integrating strategic plans with PBF goals, monitoring progress, and introducing new ideas and strategies.

  • Prepare a detailed review of the Institute’s strategic plan and its relationship with PBF, including priorities, activities, indicators, responsible parties, and budget to determine progress and alignment with MSES priorities and propose any revisions as needed. Include in this review an analysis and if applicable, an action plan with recommendations
- Long-term leadership and strategic planning recommendations (August 2018 and after)
  - Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s PBF activities, which may include assessing and changing performance indicators, evaluating the processes by which institutions were awarded, and strengthening communications between MSES and the Institute.
  - Continue to solicit feedback on PBF best practices through regular examination of peer-reviewed research and participation in national, regional, and international meetings and conferences.

41. The following infographic summarizes the leadership and strategic planning recommendations for the Institute of Physics.
INSTITUTE OF PHYSICS
LEADERSHIP & STRATEGIC PLANNING RECOMMENDATIONS

**Short-term Recommendations (October 2016-July 2017)**
- Convene an Institute Working Group to oversee the adoption and implementation of performance contracts
- Review national higher education planning reports
- Prepare a list of 3-4 institution-specific key performance indicators
- Ensure that the Institute-wide strategic plan is adopted across the Institute by all parties, and clearly specifies performance measures and goals in alignment with MSES priorities

**Long-term Recommendations (August 2018-onwards)**
- Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s performance-based funding activities
- Continue to encourage feedback on best practices in performance-based funding

**TIMELINE**
- **2016**
- **2017**
- **2018**

**Medium-term Recommendations (August 2017-July 2018)**
- Publish an easy-to-read and accessible summary on the Institute’s website, outlining the Institute’s performance-based funding goals and the annual results
- Collaborate regularly with other research institutes and the MSES
- Organize (≥2) meetings to share best practices
- Prepare a detailed review of the Institute’s strategic plan and its relationship with performance-based funding

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Education
II. Fiscal

42. For institutions to fully adopt and integrate PBF, there must be a clear and discernible link between performance on key indicators and internal resource allocations.

- **Short-term PBF-related fiscal recommendations (October 2016 – July 2017)**
  - Attend 1-2 meetings which focus on best practices on internal resource allocation mechanisms offered by higher education institutions in Croatia.
  - Prepare detailed review of the strengths, weaknesses, and opportunities to enhance the alignment of internal resource allocation with the Institute’s strategic plan and the expanded use of performance contracts by MSES.

- **Mid-term PBF-related fiscal recommendations (August 2017 – July 2018)**
  - Clearly and unambiguously report institutional results to MSES on the Institute’s performance for each of its indicators in early June 2018.
  - Review and assess the financial implications of the Institute’s performance as it relates to the terms of the performance agreement (MSES should make awards no later than the end of July 2018) and provide written feedback to the MSES.
  - Review and assess the Institute’s alignment between PBF awards and internal resource allocation decisions. Utilize PBF allocations to reward performance and incentivize researchers as well as fund activities and programs in support of specific goals. Forty percent of the last round of funding was utilized to purchase a journal subscription, which while important, does not appear to bear a direct relationship to the PBF performance goals “to increase published papers, citations, and the number of students working toward PhDs.” The Institute should use this opportunity to develop a more performance-based orientation for the organization.

- **Long-term PBF-related fiscal recommendations (August 2018 and after)**
  - Support the work of MSES in assessing the financial management capacity-building needs of the Institute; ensure that appropriate parties participate in activities as offered by the MSES.
  - Additional fiscal recommendations indirectly related to PBF include:
- Addressing issues of low compensation for new hires, consider reducing the number of planned new hires and increasing salary and benefit levels.
- Continuing to develop efficiencies and consider resource-sharing with other institutes (e.g. journal subscriptions).
- Continuing to develop new revenue sources.

43. The following infographic summarizes the fiscal recommendations for the Institute of Physics.
INSTITUTE OF PHYSICS

FISCAL RECOMMENDATIONS

Short-term Recommendations (October 2016-July 2017)

- Attend 1-2 meetings which focus on best practices on internal resource allocation mechanisms offered by higher education institutions in Croatia
- Prepare detailed review of strengths, weaknesses, and opportunities to enhance alignment of internal resource allocation with the Institute’s strategic plan and the expanded use of performance contracts by MSES

Long-term Recommendations (August 2018-onwards)

- Support work of MSES in assessing financial management capacity-building needs of the Institute

Medium-term Recommendations (August 2017-July 2018)

- Report results to MSES on Institute’s performance for each indicator (in June 2018)
- Review and assess MSES financial awarding of Institute’s performance and provide written feedback to MSES
- Review and assess Institute’s alignment between performance-based funding awards and internal resource allocation decisions

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Education
Annex 1. Project Timeline and Activities

- **July 2015**: Consultations with MSES
- **August**: Evaluation of Universities (8 Site Visits)
- **September**: Self-Assessment Distributed to Universities
- **October**: Self-Assessment Completed (Dubrovnik, Osijek, Pula)
- **December 2016**: Data Gathering Technical Mission
- **January**: Project Launch + Workshop
- **February**: Evaluation Report + Progress Report
- **March**: Technical Missions
- **April**: Legislative Recommendations on PBF
- **May**: Workshop + Summary Report
- **June**: Project Extension Approved
- **July**: Institutional Workshops
- **August**: Self-Assessment Completed (Rijeka, Split)
- **September**: Final Workshop
- **October**: Diagnostic Assessment + Roadmaps
- **Completion**
Annex 2. Highlights of Best Practices and Lessons Learned

International Experience

Chile

1. To complement the existing norms of formula funding and competitive grants, in 2007, Chile introduced Performance-Based Agreements (PBAs) on a pilot basis to enhance the performance of higher education institutions. The goal and specific objectives of the PBAs are as follows:

   - **Goal:**
     - To align institutional missions with national and regional priorities, university autonomy with public accountability, and institutional performance with public funding.

   - **Specific objectives:**
     - To develop and strengthen the capacities and competencies at universities for outcome-based management in priority fields for Chile;
     - To improve the quality of the educational provision; and
     - To assure periodic, transparent and public measurement of outcomes;

2. The Government of Chile expanded the PBAs more broadly across the system, having seen various benefits. These benefits include the improvement of student retention rate and the increase in scientific and technological production. Minimum criteria to participate in PBA and factors for successful implementation at the government level and institutional level in Chile are included below.

   - **Minimum Criteria to Participate in PBA:**
     - Well-developed and officially approved Strategic Development Plan, including clear mission and vision, educational model, and a basic information management system
     - A satisfactory initial level of institutional development
     - Ensure full alignment of projects with the government’s higher education policies
     - Institutionalization of the PBA team for sustainability once external funding is completed

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Success Factors

i. Government Level

- Appropriate selection of HEI, focusing on institutions which possess levels of development ensuring solvency and a capacity to undertake new strategic challenges;
- Wide dissemination of the new PBA instrument;
- Renewal of governmental bodies: Just as universities must make changes to improve their performance, government bodies and other national and international entities involved must also make changes in line with institutions to streamline processes;

ii. Institutional level

- Selection of central themes to institutional development and the fulfilment of its mission and goals;
- Involvement of academic and administrative units at an early stage;
- A team of highly professional negotiators;
- A committed and motivated management team which can build a feasible vision and integrate many people around common objectives, overcoming any possible differences and prejudices;

Hong Kong

3. In Hong Kong, there are eight public institutions that are funded by the University Grants Commission (UGC). This Commission is responsible for advising the government on the developmental and funding needs of higher education institutions. Since each institution has a significant degree of freedom to create its own profile, there is a tendency that many want to be research intensive, leading to a lack of diversification in the system.³

4. To encourage role differentiation, the UGC introduced a Performance and Role-Related Funding Scheme (PRFS) for the 2005-2008 (triennium). Hence, the objective of the PRFS was to provide assurance that the institutions are adhering to their roles and that they perform well in those roles by linking funding allocation and performance against the expected role. Ten percent of recurrent public funds was set aside for this peer-review driven system of performance evaluation. HEIs could earn back 10 percent of their block grant if they adhered to their mission and performed well in their role.

5. There are six common indicators set by the UGC for all HEIs and optional indicators (no more than ten) that each HEI may define. The common indicators are: (i) Strategy; (ii)

³ Sources: Center for Higher Education Policy Studies (CHEPS), 2011, Quality-related Funding, Performance Agreements, and Profiling in Higher Education – An International Comparative Study.
Advanced scholarships; (iii) Teaching, Learning, and Student Achievement; (iv) Community Development; (v) Administration; and (vi) Partnerships.

6. The following properties are required of the indicators:

- Indicators should address both outputs and processes with reference to relevant input measures where appropriate. Indicators should enable an assessment to be made of both the delivered output and efforts to achieve the desired output.
- Indicators should enable longitudinal comparison to be made over time, such that changes in performance can be assessed in subsequent PRFS exercises.
- Indicators should allow evidence to be presented both qualitatively and quantitatively; and
- As far as possible, each type of indicator should be agreed by both the UGC and institutions.

7. An institution’s performance is evaluated by the UGC’s Assessment Panel based on a written self-assessment of performance against the two types of indicators (common and optional) submitted by each institution. The Panel assesses (i) the appropriateness of the criteria and benchmarks selected by the institution to measure its own performance in relation to its role; (ii) the sufficiency, quality and relevance of the evidence provided in the submission of performance against criteria; and (iii) the extent to which the submission as a whole is a reflective and evaluative account, and determines the final overall rating. The assessment categories for the first three steps are: Fail, Low, Medium or High. The rating from the first step cannot be improved upon by the ratings from the other two. The overall ratings are Low, Medium, High or Excellent. If a “Fail” judgement is made in the three steps outlined above, no overall PRFS rating is given.

8. In 2012-2015, the UGC introduced a new funding mechanism based on Academic Development Proposals (ADP). The ADP focuses more on strategic issues and performance rather than on a high level of detail of individual program offerings as in the PRFS. The PRFS experience was integrated into ADPs into four broad evaluation criteria: (i) Strategy, (ii) Teaching & Learning, (iii) Advanced Scholarship, and (iv) Community. Based on the ADP submitted by HEIs, the UGC then recommends to the Government how it should allocate the student places at different levels and hence allocate recurrent funding among HEIs. However, it should be noted that the adherence to the role of each institution remains a central theme in the assessment.
Costa Rica

9. In 2012, the Costa Rican government commenced a World Bank-funded project to introduce performance agreements called “Institutional Improvement Agreements (AMI)” with four of the five public universities in Costa Rica.4 The objectives of the project were to:

- help public universities to increase access by investing in infrastructure for teaching, learning and research;
- increase the quality of higher education by upgrading faculty qualifications and fostering evaluation and accreditation;
- increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and
- strengthen public universities’ management capacity and accountability by strengthening a culture of strategic long-term planning and measurement, target setting, accountability, and monitoring and evaluation.

10. Universities develop an Institutional Improvement Plan (PMI) in which each university defines specific targets for four strategic axes. These dimensions are: (i) Access; (ii) Quality; (iii) Innovation and scientific and technological development; and (iv) Institutional management. Through the project, universities receive USD 50 million (€44.57 million) to implement activities to achieve their targets. Each university also contributes USD 5.8-9.5 million (€5.2-8.5 million) counterpart fund.

11. In terms of assessing institutional performance, universities are responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective AMI. Universities then provide a monitoring and evaluation (M&E) report to the Project Coordinating Unit (UCP) twice a year. The UCP reports the M&E information directly to the Liaison Commission, in which both the government and universities are represented. The Liaison Commission establishes a Monitoring and Evaluation Committee that is composed of a team of specialists of recognized authority to provide an external and impartial assessment of Project implementation. The M&E Committee performs three qualitative evaluations of the Project: at the end of Year 1; at mid-term; and at the end of the five-year project implementation period.

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USA

12. In the United States, 26 of 50 states have experimented with PBF to improve institutional effectiveness by linking state funding with institutional performance. The most intense period for this “experiment” spanned 1979 to 2007, and during these initial phases, most PBFs took on the form of formula funding, while performance agreements were relatively limited. PBF gained popularity in the 1990s, when states had sufficient funding, but many states transitioned away from PBF in the early 2000s as revenues declined. Other main reasons for its unpopularity included inflexibility to accommodate institutional differences and campus missions, lack of sustained support from political and campus leaders, and lack of reliable data for performance measurement.

13. The State of Louisiana allocates 15 percent of the operating budget for higher education institutions through a performance agreement system. It is expected that the proportion would go up to 25 percent. Institutions enter into performance agreements with the Louisiana Board of Regents, a state agency that coordinates all public higher education in Louisiana. These agreements establish annual performance targets that are unique to each institution’s mission and based on objectives established in the Granting Resources and Autonomies for Diplomas (GRAD) Act.

14. In exchange for meeting performance targets, institutions can receive permission to raise tuition by up to 10 percent without legislative approval. The performance targets encompass a variety of objectives relating to student performance, articulation and transfer, workforce development, and efficiency and accountability. The indicators include:

- Student success
  - Change in retention
  - Number of degree and certificate completers
  - Increase passage rates on licensure and certification exams
- Articulation and transfer
- Workforce and economic development
  - Employment of degree and certificate earners
  - Research productivity
- Institutional efficiency and accountability


National Conference of State Legislatures
15. Based on the lessons learned at an earlier stage, more than 10 US states have redesigned their PBF models and have successfully implemented improved models. It is important to note, however, the effectiveness of PBF in the United States is not conclusive. Researchers and policymakers continue to explore the application of PBF in a number of higher education systems across the country, and whether performance agreements are the appropriate instrument to achieve the desired results.

Regional (European) Experience

16. Many countries in Europe face fiscal challenges and the efficiency and sustainability of funding public higher education is becoming increasingly important. As a cost-effective funding model, PBF has been encouraged at national and European levels. Based on various countries’ experiences in Europe, below are recommendations to policy makers and institutions:

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Performance-based budget in total recurrent funding</th>
<th>Performance Agreement (PA) in place with direct impact on an institution’s budget allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>27% - 32%</td>
<td>Yes</td>
</tr>
<tr>
<td>Austria</td>
<td>Almost 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>England</td>
<td>50%</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>75% - 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8% (now) – 10% (future)</td>
<td>Yes</td>
</tr>
<tr>
<td>North-Rhine Westphalia (Germany)</td>
<td>23%</td>
<td>Yes</td>
</tr>
<tr>
<td>Scotland</td>
<td>85%</td>
<td>Yes</td>
</tr>
<tr>
<td>Thuringia (Germany)</td>
<td>55%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems.

Croatia

Reimbursable Advisory Services
Assistance to the Ministry of Science, Education and Sports
for Higher Education Finance Reform

Expanding

Performance-Based Funding in Higher Education:
Institutional Roadmap—University of Osijek

February 2017
Disclaimer:

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This report does not necessarily represent the position of the European Union or the Government of Croatia.

Any references to rankings, stated or implied, is within the sole context of the higher education system in Croatia and based on nonbinding criteria established by the World Bank for this engagement.
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Abbreviations

ADP  Academic Development Proposals
AHP  Analytic Hierarchy Process
AMI  Institutional Improvement Agreements
     (un Acuerdo de Mejoramiento Institucional)
ECTS European Credit Transfer and Accumulation System
EUA  European University Association
FTE  Full-Time Equivalent
HEI(s) Higher Education Institution(s)
ISVU Higher Education Institutions Information System
MoF  Ministry of Finance
MSES Ministry of Science, Education, and Sports
M&E  Monitoring and Evaluation
PA(s) Performance Agreement(s)
PBA  Performance-Based Agreement
PBF  Performance-Based Funding/Financing
PMI  Institutional Improvement Plan
     (un Plan de Mejoramiento Institucional)
PRFS Performance and Role-Related Funding Scheme
RAS  Reimbursable Advisory Services
STEM Science, Technology, Engineering, and Mathematics
TA  Technical Assistance
UCP  Project Coordinating Unit
UGC  University Grants Commission
WB  World Bank
Executive Summary

1. This report is the culmination of a year-long evaluation of the Croatian higher education sector’s readiness to expand the funding practices of the universities and research institutes to include greater levels of performance-based funding. Having gone through the pilot experience of the preliminary performance agreements of 2012-2015, both the institutions and the Ministry of Science, Education, and Sports (MSES) had deep insights in what they understood were the strengths and challenges of those agreements for their own organizations. The World Bank team sought to explore those localized experiences in the context of the global experiences with similar funding norms, to provide useful and relevant information about how to move forward with performance-based funding in Croatian higher education.8

2. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

3. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university and research institute costs as well as student tuition at universities should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

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8 For a sector-wide review of the preparedness of the all universities and the Institute of Physics to utilize expanded performance-based funding, please see the “Final Report on Institutional Readiness for Expanded Performance-Based Funding in Higher Education” (September 2016).
• the relationship between the MSES and the institutions particularly in regard to personnel practices.

4. Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging. Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated.

5. Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF. These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

• Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
• Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
• Collecting and using data more deliberately and effectively; and
• Increasing efficiencies and developing additional revenue streams.

6. A consistent willingness to engage in this process on the part of both MSES Representatives and university leaders has been vital for continued commitment to meet, discuss, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

7. Following a section that briefly highlights some of the most relevant global experiences with performance-based funding, the report presents the evaluation outcomes for the University of Osijek. The institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with university and research institute leaders—through site visits, collective workshops, and self-assessments
completed by the leadership teams. The findings focus on three (3) key areas of institutional governance:
8. The University of Osijek’s more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements concludes the report. The roadmap includes a “scorecard” measurement on each of these three criteria as well as options for addressing any identified challenges. This scorecard measurement is represented in the text as well as in the included infographics within the institution-specific evaluation section. Each roadmap includes recommendations across the three areas of institutional governance for the following time periods: (i) short-term (October 2016 – July 2017); (ii) medium-term (August 2017-July 2018); and (iii) long-term (August 2018 – onwards).

9. The road ahead is promising for expanding performance agreements to promote innovation and efficiency in Croatian higher education. All stakeholders identify important benefits from elements of the pilot and these elements can be further embedded in the funding policies in the future. Likewise, all stakeholders expressed some frustrations and challenges from the pilot, and understanding and addressing those will prove vital to successful implementation PBF in Croatia during the next rounds. This report serves to illustrate both what has worked and what needs reform, in order to lay the foundation for even more effective utilization of PBF and to maintain constructive partnerships between the higher education sector and the MSES.
Introduction

10. Croatia’s education reforms in recent years have covered many aspects of the system, ranging from preschool to university. The most recent education strategy – the Strategy for Education, Science, and Technology – was adopted in 2014, with a focus on reforming the education and training system. These areas of reform account for Croatia’s adverse demographic conditions of an aging and shrinking population and geographic characteristics, among others. According to the Strategy, education and science are the focal points of Croatia’s development plans.

11. Demographic decline, aging, and lost years of employment remain significant barriers to growth in Croatia. As the recovery from the lengthy recession continues, Croatia’s growth prospects remain vulnerable to adverse demographic trends. For Croatian living standards to converge with its Western European neighbors, the labor force must be more productive and become more flexible in a rapidly changing labor market, where the employment participation rate has experienced a downward trend since 2008. These challenges prompt the need to balance policy reforms in education and training, and the broader economy, in a constrained budgetary environment.

12. In addition to demographic decline and aging, years of lost employment is also a significant problem for Croatia. Among 25-34 year-olds, 35-44 year-olds, and 45-54 year olds, the average Croatian spends three years in unemployment or inactivity. This number doubles among 55-64 year olds. Among women, the average female in Croatia spends 17 years of her working life in unemployment or inactivity. This compares unfavorably with other European Union (EU) countries (Figure 1).

![Figure 3. Average years of lost employment for an individual, circa 2010](source: World Bank (2014), Back To Work: Growing with Jobs in Europe and Central Asia)
13. These adverse population trends have current and long-term implications for Croatia’s human capital and macroeconomic agenda to promote employment and sustainable economic reforms. Human capital remains critical to Croatia’s service sector which dominates the country’s employment landscape.

14. Croatia’s lack of economic growth in recent years is reflected in low labor productivity. In addition to expanding employment by increasing the employment rate and the working life of individuals, productivity gains are central to addressing demographic decline and aging. While many European neighbors experienced low, but positive growth in productivity relative to the United States, Croatia’s productivity declined significantly (Figure 2), and now lags many EU countries.

Figure 4. Productivity Levels in Europe compared to the United States

Source: International Labor Organization, Key Indicators of the Labor Market Database

15. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

16. The implementation of performance-based funding (PBF) in higher education is a growing global trend as countries face persistent budgetary pressures in education and across
their fiscal obligations. In countries where the majority of higher education institutions (HEIs) receive public funding, PBF is a recognized tool to implement more efficient and adaptive funding norms. Moreover, PBF can help to achieve improved quality and relevance, research excellence, and better accountability and autonomy, among others important outcomes of finance reform. PBF allows for flexibility in selecting appropriate indicators to achieve wide-ranging goals.

17. In 2010, the World Bank (WB) launched a regional higher education program to provide technical assistance (TA) to select European and Central Asian countries. The program was designed and executed to deliver quality TA through knowledge products, capacity-building workshops, and policy advice in higher education. In the case of Croatia and at the behest of the Ministry of Science, Education, and Sports (MSES), the engagement centered on two main tasks: (i) financing mechanisms for higher education, and (2) an independent assessment of the University of Zagreb by the European University Association (EUA).

18. In 2013, the WB’s involvement in Croatia’s higher education sector expanded with a request from the Ministry of Science, Education and Sports (MSES) to provide (reimbursable) advisory services (RAS) in higher education. After a period of project design and consultation, the RAS became effective in May 2015. The ongoing advisory services focus specifically on improving the capacity of universities and research institutes to effectively implement more comprehensive performance-based contracts within the higher education system of Croatia.

19. The role of the World Bank team in these advisory services has been to:

- provide technical expertise in evaluating global perspectives related to performance-based funding (PBF) in tertiary education, including knowledge of legislative frameworks and governance norms necessary for effective implementation of PBF models for university budgeting; and

- serve as a neutral intermediary in identifying the challenges each selected institution would face in meeting the minimum criteria for enacting and managing broader use of performance-based funding in their operational budgets, and targeting directed support at 5 selected institutions (4 universities and 1 research institute) to promote meeting the minimum requirements as established by the collaboration between tertiary stakeholders and the government.

20. To perform its role under these advisory services, the WB has prepared the following three outputs:
• a comparative assessment of the PBF pilot in Croatia, utilizing international examples, with recommendations for improving the next round of PBF for the targeted institutions;
• a report detailing the assessment of all seven public universities and one public research institute (selected by the MSES), including shared challenges, overlapping and/or distinct issues, annexes with individual campus evaluations of impediments to the institutions’ ability to meet the minimal criteria and recommendations for reforms;
• an assessment of the legislative context for higher education finance and recommendations for reforms.

Timeline of Performance-Based Funding in Croatia

Workshops (2011)

21. To perform its role under these advisory services, the WB has prepared the following three outputs: The first workshop on PBF was held in February 2011. The WB and the MSES organized this workshop for Croatian universities focused on PBF and the European experience with PBF.

22. In July 2011, a second workshop was organized. This workshop focused on the testing and implementation of funding/performance agreements which was co-convened by the MSES and the WB. The workshop targeted the leadership of most public universities in Croatia, and all participants agreed to proceed with the proposed model of funding agreements as a basis for future budget allocations. There was widespread belief that the proposed changes to a performance-based system addressed the existing challenges in Croatian higher education. Many of the proposed changes in higher education, however, proved to be unpopular. The proposed reforms were directed to the Croatian Parliament for discussion, but higher education stakeholders asked for the proposals to be withdrawn. The proposed reforms were not passed.

Bilateral Contracts (2012-2015)

23. Building on the work of the regional technical assistance program, PBF was introduced in Croatia’s higher education system in 2012. Three-year bilateral contracts were the instruments used for PBF. The MSES entered into these contracts with each of the country’s eight (8) public universities.

24. The 2012-2015 performance-funding contracts included the provision that the MSES would subsidize full-time university students throughout the three-year time period. Further, each university would adopt mandatory performance measures provided by MSES, as well as
adopt performance measures selected by the universities (and research institutes where applicable). The list of mandatory MSES performance measures included:

- Increasing the number of students with disabilities;
- Increasing the number of students aged 25 and over;
- Increasing the number of students from lower socio-economic backgrounds;
- Increasing the number of graduates from science, technology, engineering, and math (STEM) fields;

**Interim Bilateral Contracts (2015)**

25. **Interim contracts were also signed in 2015 to ensure budget continuity, while broader and more substantive agreements were considered and agreed.** These reforms aimed to maximize the quality and accessibility of the higher education system. Full funding agreements will be implemented in another phase of reforms. The transition to PBF in Croatia coincides with the unforeseen implications of introducing two new public universities into the sector and anticipated fiscal challenges across the total national budget.

**The Croatian Experience with Performance-Based Funding**

26. **The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded.** This approach proved to be a significant departure from long-standing expectations and practices that university costs as well as student tuition should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and
- the role of institutional autonomy with regard to relationship between the MSES and the institutions around issues of institutional management, including personnel practices and use of self-generated income.
27. Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging. Croatia’s experience with PBF will continue to require significant collaboration between the institutions and MSES, and support from MSES over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF. Specifically, university performance on agreed-upon indicators was not evaluated by the MSES resulting in a breakdown of the all-important relationship of between performance and fiscal rewards which undergirds any performance-based funding contract. Complicating this matter was the disappointment that the universities and research institutes received less funding overall from the government than they had anticipated. Finally, three significant changes in the national government over the past few years—since PBF was introduced—have meant parallel changes in MSES leadership resulting in uneven forward movement. The explicit and detailed findings related to the practical implications of these challenges for future reforms are detailed in the institution-specific sections below.

28. Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF. These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while, internally, a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification, ownership and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan objectives and accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.

29. A consistent willingness from both MSES Representatives and university/research institute leaders to pursue collaborative reforms has been vital for continued commitment to meet, explore, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.
30. **The following institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with institutional leaders—through site visits, collective workshops, and self-assessments completed by the leadership teams.** The findings focus on three (3) key areas of institutional governance: leadership and strategic planning, fiscal management, and the effective management and utilization of data. Each university and the research institute has received a more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements. The roadmaps for the universities include a “scorecard” measurement on each of these three criteria based on the self-assessments submitted by the leadership teams as well as the WB’s year-long engagement with university and research institute leaders. The roadmaps also contain options for addressing any identified challenges. The following section presents the findings and roadmap for addressing institutional challenges at the University of Osijek.

Josip Juraj Strossmayer University of Osijek

31. **The University of Osijek is located in the Slavonija region of eastern Croatia, in the fourth most populous city in the country.** Geographically, the University is in proximity to three countries: Bosnia-Herzegovina, Hungary, and Serbia. The University was founded in 1975 and enrolls 18,500 students. The University is structured as a semi-integrated organization with a combination of 11 autonomous Faculties (Agriculture, Civil Engineering, Economics, Education, Electrical Engineering, Food Technology, Law, Mechanical Engineering, Medicine, Philosophy, and Theology); five centralized Departments (Biology, Chemistry, Cultural Studies, Mathematics, and Physics); and an Academy of Arts. The University recently erected a student dormitory and is currently building a new facility for its Faculty of Law.

32. **The strategic plan of the University of Osijek contains priorities similar to those identified by the MSES for inclusion in the upcoming round of performance-based contracts indicating overall institutional alignment with governmental objectives.** For example, the University’s objectives include simplifying access to higher education for youth from families with a lower level income status and students with disabilities during a 10-year period; increasing the number of students enrolled in STEM program areas; increasing the number of people graduating in STEM programs areas; and a constant monitoring of expenses for part-time associates and a mandatory planning of funds for part-time collaboration. Further, the University leadership notes that although the university includes legally autonomous faculties, all units – faculties and departments alike – must align their strategic plans in accordance with the objectives outlined in the institutional strategic plan.

33. **The University’s annual budget for fiscal year 2014 was 262.4 million kuna (€34.5 million).** While there is no cross-subsidization across faculties and departments, the University utilizes a multi-criteria decision-method to determine the allocation of funds according to performance (explained below).
Experience with Performance-Based Funding

34. The University reported achieving most of the goals articulated in the first round of PAs. The University demonstrated its ability to monitor the performance measures that were part of the first round of performance funding in Croatia that started in 2012. The University made progress on three of its four performance indicators, with the exception for integrating more students over the age of 25. The University’s key performance indicators include:
   i. increase STEM enrolment;
   ii. integrate students with disabilities;
   iii. integrate students older than 25 years old; and
   iv. to strengthen the learning outcomes of its academic programs;

35. The University received its agreed upon allocation for implementing the PA for the period 2012-2015. The University noted that goals being established at the national level was one of the main positives of its experience with the PA. The assigned ways of spending its allocation under the PA, however, were not fully aligned with the University’s strategy. The same funding amount was allocated for all students with insufficient consideration for the individual (unit) cost of study.

36. Regarding the performance agreement, the University believes that there are insufficient linkages and communication between universities and economy. The University strives to create programs that are appropriate for its business environment, focusing on goals such as becoming recognized for its programs in agriculture and electronics. However, the government’s economic development strategy – for developing industry and other sectors – remains unclear to the University.

37. Opportunities for the University to improve its positioning around PBF are to identify and include specific outcome-based measures in its Analytic Hierarchy Process (AHP). These measures include:
   i. increasing the number of students who graduate in a STEM area and increasing the number of students who return after the first year by a certain percentage on an annual basis;
   ii. exploring the feasibility of cross-subsidization amongst constituent units based on performance;
   iii. implementing a more comprehensive data collection system with an audit process; and
   iv. identifying strategies to increase the number of adult students.
Strengths

38. The University employs its AHP in which its management has implemented ten (10) key institutional criteria for performance assessment. The business activity of all constituent units is assessed against these criteria, based on the data collected (for each criterion). Some of the criteria is applied proportionally – (P) indicates a positive effect – and some reciprocally – (R) point to unfavourable long-term effects in most cases. The effect of each individual criterion is evaluated in combination with others with the objective of achieving the desired long-term improvements. For example, the number of students enrolled is a positive criterion, but the overall effect is evident only when combined with the students enrolled in STEM program area criterion and the criterion of the mean difference of the number of students per teacher from the target number (30), because they provide extra regulations of a potentially irrational enrolment policy. The 10 criteria are included below (Table 1).

Table 1. University of Osijek performance-based funding criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of students in undergraduate and graduate study programs</td>
<td></td>
</tr>
<tr>
<td>The number of undergraduate, graduate and professional study programs</td>
<td></td>
</tr>
<tr>
<td>Prioritizing STEM area</td>
<td></td>
</tr>
<tr>
<td>Total costs of part-time collaboration (direct and indirect)</td>
<td></td>
</tr>
<tr>
<td>Full-time students’ fees revenue (linear payment model)</td>
<td></td>
</tr>
<tr>
<td>Total available space in the building (for holding classes, administrations, techniques etc.) per student</td>
<td></td>
</tr>
<tr>
<td>Passive operation costs (overhead expenses) – electricity, heating, telephone (without mobile telephony), utility services (water, refuse collection, etc.)</td>
<td></td>
</tr>
<tr>
<td>Mean difference of the number of students per teacher from the target number (30)</td>
<td></td>
</tr>
<tr>
<td>Field course cost proportion and mentorship costs in total material expenditures funded from the state budget per student</td>
<td></td>
</tr>
<tr>
<td>Material costs of teaching per student</td>
<td></td>
</tr>
</tbody>
</table>

39. During the implementation of the PA, a student dormitory was constructed. The dormitory was built to increase the number of students who can be accommodated with University housing, with a focus on students from low-income backgrounds and students from the EU who aim to pursue higher education in Croatia—addressing both equity and internationalization considerations.

40. The institution’s additional strengths indicate its readiness to participate in the next round of performance funding anchored by its recently implemented, more integrated institution-wide data collection system. The commitment to ‘functional’ integration through measures such as uniform data systems and utilisation is a major strength of the University of Osijek. Further strengths in this area include the close alignment of its institutional goals with MSES objectives; experience in monitoring and measuring a number of key performance indicators across the University; and its past experience in performance funding.
Challenges

41. **Approximately 90 percent of the University’s budget is dedicated to salaries with the remainder allocated to maintenance.** The remaining 10 percent of the budget – which is not tied to salaries – presents a challenge in developing ambitious new programs for students and proposals for EU funding to increase the University’s total budget. Given the large share of its budget allocated to salaries, the University strives for more autonomy in managing its budget, inclusive of salaries.

42. **A large share of the University’s revenue – roughly 70 percent in 2014 – was derived from the State budget.** This reliance on State funding presents a challenge, particularly within the context of declining State funding for the higher education sector, an increase in the number of public universities, and demographic decline.

Recommendations for the University of Osijek

I. **Leadership and Strategic Planning**

43. **The University of Osijek’s leadership has made great strides in creating a campus culture oriented to outcomes-based activities through its Analytic Hierarchy Process (AHP).**

- Short-term leadership and strategic planning recommendations (October 2016 – July 2017)
  - **Convene a University working group to oversee the activities related to the adoption and implementation of performance contracts and report regularly on the progress of the university regarding the performance contracts.** The working group should include academic, administrative, and student representation from across the institution and report directly to the Rector. Focused on the three main areas of institutional readiness related to performance funding—leadership, fiscal systems, and data—the working group should immediately:
    - identify its membership,
    - draft its charter, roles and responsibilities; and
    - develop a project plan with timelines, key tasks, and responsible parties utilizing the following recommendations as a guide.
  - **Review national higher education planning reports** including the Strategy for Science, Education, and Technology (2014-2020), the Smart Specialization Strategy (2016) and the Croatian Innovation Strategy (2014) to determine if and how the University’s existing strategic plan aligns with recently adopted national priorities.
• Prepare a list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with MSES as the basis for the overall application of PBF at the University.

• Seek opportunities to present at national, regional, and international conferences providing other institutions and governments the opportunity to learn from the University of Osijek’s Analytic Hierarchy Process.

• **Mid-term Leadership and Strategic Planning Recommendations (August 2017 – July 2018)**
  
  • Publish on the University website an easy-to-read and accessible summary outlining the University’s PBF goals and the annual results in reaching these goals.

  • Collaborate regularly with other higher education institutions and the MSES to share best practices, address concerns and issues, and assess the implementation of PBF through ongoing and open communications, which will be the cornerstone of effective PBF.

  • Organize meetings (at least two, to build upon progress) to share best practices with other institutions in integrating strategic plans with PBF goals, monitoring progress, and introducing new ideas and strategies.

  • Prepare a detailed review of the University of Osijek’s strategic plan and AHP and their relationship with PBF, including priorities, activities, indicators, responsible parties, and budget to determine progress and alignment with MSES priorities and propose any revisions as needed. Include in this review an analysis and if applicable, an action plan with recommendations, discussing how the integration status of the University affects the successful implementation of PBF.

• **Long-term leadership and strategic planning recommendations (August 2018 and after)**

  • Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s PBF activities which may include assessing and changing performance indicators, evaluating the processes by which institutions were awarded, and strengthening communications between MSES and the University. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).
• Continue to solicit feedback on PBF best practices through regular examination of peer-reviewed research and participation in national, regional, and international meetings and conferences.

44. The following infographic summarizes the leadership and strategic planning recommendations for the University of Osijek.
UNIVERSITY OF OSIJEK
LEADERSHIP & STRATEGIC PLANNING RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING
FISCAL € kn
DATA SYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)
Convene a University Working Group to oversee the adoption and implementation of performance contracts
Review national higher education planning reports
Prepare a list of 4-8 institution-specific key performance indicators
Seek opportunities to present at national, regional, and international conferences

Long-term Recommendations (August 2018-onwards)
Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s performance-based funding activities
Continue to encourage feedback on best practices in performance-based funding

Medium-term Recommendations (August 2017-July 2018)
Publish an easy-to-read and accessible summary on the University website, outlining the University’s performance-based funding goals and the annual results
Collaborate regularly with other higher education institutions and the MSES
Organize (≥2) meetings to share best practices
Prepare a detailed review of the University’s strategic plan and AHP, and their relationship with performance-based funding

WORLD BANK GROUP
Education

THE WORLD BANK
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II. Fiscal

45. For institutions to fully adopt and integrate PBF, there must be a clear and discernible link between constituent performance on key indicators and internal resource allocations.

- Short-term PBF-related fiscal recommendations (October 2016 – July 2017)
  - Organize presentations from 1-2 other universities and an international expert related to best practices on internal resource allocation mechanisms.
  - Prepare detailed review of the strengths, weaknesses, and opportunities to enhance the alignment of internal resource allocation with the University of Osijek’s strategic plan and AHP with the expanded use of performance contracts by MSES.

- Mid-term PBF-related fiscal recommendations (August 2017 – July 2018)
  - Clearly and unambiguously report institutional results to MSES on the University’s performance for each of its indicators in early June 2018.
  - Review and assess the financial implications of the University’s performance as it relates to the terms of the performance agreement. (MSES should make awards no later than the end of July 2018) and provide written feedback to the MSES
  - Review and assess the University’s alignment between PBF awards and internal resource allocation decisions. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

- Long-term PBF-related fiscal recommendations (August 2018 and after)
  - Support the work of the MSES in assessing the financial management capacity-building needs of the University; ensure that appropriate parties participate in activities as offered by the MSES.

46. The following infographic summarizes the fiscal recommendations for the University of Osijek.
UNIVERSITY OF OSIJEK
FISCAL RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING
FISCAL
DATA SYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)
Share best practices on internal resource allocation mechanisms by organizing presentations from 1-2 other universities and an international expert
Prepare detailed review of strengths, weaknesses, and opportunities to enhance alignment of internal resource allocation with the University’s strategic plan and AHP with expanded use of performance contracts by MSES

Medium-term Recommendations (August 2017-July 2018)
Report results to MSES on University’s performance for each indicator (in June 2018)
Review and assess MSES financial awarding of University’s performance and provide written feedback to MSES

Long-term Recommendations (August 2018-onwards)
Support work of MSES in assessing financial management capacity-building needs of the University

WORLD BANK GROUP
Education

THE WORLD BANK
IBRD-IDA | WORLD BANK GROUP
III. Data

47. **Data collection, reporting, and analysis requires systematic improvement** for a credible and reliable national PBF. Each institution has a role to play in strengthening its data resources and systems along with the MSES.

- **Short-term PBF-related data recommendations (October 2016 – July 2017)**
  - Prepare a list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with MSES.
  - Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis.\(^9\)
  - Conduct a needs assessment to determine key institutional data needed to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates).
  - Compare data definitions across faculties and departments to ensure University-wide and MSES consistency.\(^10\)

- **Mid-term and long-term data recommendations (August 2017 and beyond)**
  - Prepare an implementation plan to develop common data warehouses and utilization throughout the University.
  - Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations.

48. The following infographic summarizes the data recommendations for the University of Osijek.

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\(^9\) As participants in the U-Multirank, the University of Osijek already has the data and instrument to support this measurement and analysis of performance.

\(^10\) Likewise, this should already be possible via the U-Multirank instrument.
UNIVERSITY OF OSIJEK
DATA RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING

FISCAL
kn

DATASYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)
Prepare list of 4-6 institution-specific key performance indicators - which have transparent and clear measures - for review and negotiation with MSES
Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis
Conduct a needs assessment to determine key institutional data to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates)
Compare data definitions across faculties and departments to ensure University-wide and MSES consistency

Prepare an implementation plan to develop common data warehouses and utilization throughout the University
Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations
Annex 1. Project Timeline and Activities

- **Consultations with MSES**
- **Data Gathering Technical Mission**
- **Project Launch + Workshop**
- **Technical Missions**
  - Evaluation Report + Progress Report
- **Legislative Recommendations on PBF Roadmaps**
  - Project Completion
  - Final Workshop

**Timeline:**
- **Jul 2015**
  - Evaluation of Universities (8 Site Visits)
- **Sept 2015**
  - Self-Assessment Distributed to Universities
- **Nov 2015**
  - Self-Assessment Completed (Dubrovnik, Osijek, Pula)
- **Dec 2015**
  - PBF Briefing Note + Presentation
- **Jan 2016**
  - Workshop Extension Approved
- **Feb 2016**
  - Summary Report
- **Mar 2016**
  - Self-Assessment Completed (Rijeka, Split)
- **Apr 2016**
- **May 2016**
- **Jun 2016**
- **Jul 2016**
- **Aug 2016**
- **Sept 2016**
- **Oct 2016**
Annex 2. Institutional Self-Assessment

Institutional Self-Assessment

Instructions: This self-assessment contains multiple choice questions, questions which require an attachment, and open-ended questions. Please provide a response for all questions. Open-ended questions require a typed response in a text box.

The text box will expand to fit your response. Please limit your written responses to 1,000 words per response.

Please save your responses before closing the document.

If there are any questions while completing the self-assessment please contact:
Roberta Bassett, Senior Education Specialist: rbassett@worldbank.org
Jason Weaver, Senior Education Specialist: jweaver2@worldbank.org

Please send the completed self-assessment and any additional supporting documents to rbassett@worldbank.org by November 6, 2015.

Management Readiness

1. A. Is there a university-wide strategic plan which has been approved by the faculty senate and will be in effect for at least the next three years?

Choose an item.

If YES, please provide a copy of the strategic plan and highlight the language that aligns with the five objectives identified as priorities by the Ministry of Science, Education and Sports. These five objectives are:
   a. Increase low-income students
   b. Increase STEM students
   c. Increase first-year to second-year completion rates
   d. Provide more grants to students
   e. Increase effective management

B. For non-integrated universities only: Please provide a copy of existing strategic plans for autonomous faculties and highlight the language that aligns with the five objectives identified as priorities by the MSES.
2. *Does the University have a system which financially rewards or sanctions faculties/departments based on their performance of meeting the goals in the strategic plan?*

Choose an item.

*If YES, please explain the University’s guidelines.*

Click here to enter text.

3. *Provide an outline of a communications and participation plan to educate and engage the university community on the performance agreement.*

Click here to enter text.

4. *Has the University’s current management team enacted any changes within the past year to increase efficiencies or improve performance?*

Choose an item.

*If YES, please describe these changes, as well as the current and anticipated amount of cost-savings derived from these changes.*
5. Briefly describe the level of governance and financial integration at your University and what impact this may have on the negotiation and implementation of future performance agreements. Include how any potential challenges from the University’s organizational structure will be mitigated.

Click here to enter text.

6. How many years has the rector served in his or her current position?

Choose an item.

Fiscal Readiness

7. A. Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for the entire University in the past year.

Click here to enter text.
B. For non-integrated universities only: Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for autonomous faculties/departments in the past year.

Click here to enter text.

8. Does the University have a plan on how it may absorb potential declines in state funding over the next one to three years?

Choose an item.
If YES, describe the University’s plan on how the institution may absorb potential declines in state funding.

Click here to enter text.

9. Does the University have guidelines on how the central administration will allocate state funding to incentivize performance across all faculties and departments in alignment with the objectives outlined by the MSES?

Choose an item.
If YES, describe the University’s strategy on how the central administration will allocate state funding to incentivize performance.

Click here to enter text.
Data Readiness

10. Provide a brief description of the data collected by the University in the following areas:

a. Student demographics (e.g. gender, date of birth)
b. Student enrollment/retention (e.g. program of study, credits attempted)
c. Student financial status (e.g. full-time/part-time, family income)

Click here to enter text.

11. Explain the process by which data is collected, updated, and checked to audit validity.

Click here to enter text.

12. Does the University collect data for any of the areas identified by MSES as priorities?

Choose an item.
If YES, please provide the definition of the data collected by the universities as it relates to:

a. Low-income students
b. Student enrollment in STEM fields
c. Student retention rates (first-year to second year)
d. Students who receive grants
e. Effective university management
If NO, please explain the University’s plans to acquire the key data sources/systems to collect this data including a list of action items, completion dates, and budget.

13. Are indicators collected to monitor the implementation of strategies and achievement of goals in the University’s strategic plan?

Choose an item.

If YES, please provide three examples.

14. If the University could choose two specific performance indicators particular to its mission to be a part of the next performance agreement, please describe specifically what they would be; how they would be measured; and the annual targets.
University Feedback

15. Please explain what assistance the University may require, if any, to successfully implement the next round of performance agreements. If the response includes additional funding or staff, please specifically indicate how the funding or staff will be utilized.

16. Taking into account the state budget currently allocated to the University, how much do you estimate is still lacking as the minimum requirement necessary for running the University?

17. Provide a list of the University costs which are not sufficiently covered by the state budget currently allocated.
18. Do you consider the revenues derived from student tuition fees to be sufficient for the University budget? Or should this part of the budget be reconsidered with the objective to increase access to the University?

19. A. What costs do you currently cover with the revenue derived from student tuition fees?

B. If the costs of running the University were covered entirely by the state budget, what would be the primary purpose of the revenue derived from student tuition fees?
20. What is your estimation of the full cost of study for each student per year and per field?

Click here to enter text.
Annex 3. Highlights of Best Practices and Lessons Learned
International Experience

Chile

1. To complement the existing norms of formula funding and competitive grants, in 2007, Chile introduced Performance-Based Agreements (PBAs) on a pilot basis to enhance the performance of higher education institutions. The goal and specific objectives of the PBAs are as follows:

   - **Goal:**
     - To align institutional missions with national and regional priorities, university autonomy with public accountability, and institutional performance with public funding.

   - **Specific objectives:**
     - To develop and strengthen the capacities and competencies at universities for outcome-based management in priority fields for Chile;
     - To improve the quality of the educational provision; and
     - To assure periodic, transparent and public measurement of outcomes;

2. The Government of Chile expanded the PBAs more broadly across the system, having seen various benefits. These benefits include the improvement of student retention rate and the increase in scientific and technological production. Minimum criteria to participate in PBA and factors for successful implementation at the government level and institutional level in Chile are included below.

   - **Minimum Criteria to Participate in PBA:**
     - Well-developed and officially approved Strategic Development Plan, including clear mission and vision, educational model, and a basic information management system
     - A satisfactory initial level of institutional development
     - Ensure full alignment of projects with the government’s higher education policies
     - Institutionalization of the PBA team for sustainability once external funding is completed

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• Success Factors
  i. Government Level
  • Appropriate selection of HEI, focusing on institutions which possess levels of development ensuring solvency and a capacity to undertake new strategic challenges;
  • Wide dissemination of the new PBA instrument;
  • Renewal of governmental bodies: Just as universities must make changes to improve their performance, government bodies and other national and international entities involved must also make changes in line with institutions to streamline processes;
  
  ii. Institutional level
  • Selection of central themes to institutional development and the fulfilment of its mission and goals;
  • Involvement of academic and administrative units at an early stage;
  • A team of highly professional negotiators;
  • A committed and motivated management team which can build a feasible vision and integrate many people around common objectives, overcoming any possible differences and prejudices;

Hong Kong

3. In Hong Kong, there are eight public institutions that are funded by the University Grants Commission (UGC). This Commission is responsible for advising the government on the developmental and funding needs of higher education institutions. Since each institution has a significant degree of freedom to create its own profile, there is a tendency that many want to be research intensive, leading to a lack of diversification in the system.\textsuperscript{12}

4. To encourage role differentiation, the UGC introduced a Performance and Role-Related Funding Scheme (PRFS) for the 2005-2008 (triennium). Hence, the objective of the PRFS was to provide assurance that the institutions are adhering to their roles and that they perform well in those roles by linking funding allocation, performance and performance against role. Ten percent of recurrent public funds was set aside for this peer-review driven system of performance evaluation. HEIs could earn back 10 percent of their block grant if they adhered to their mission and performed well in their role.

5. There are six common indicators set by the UGC for all HEIs and optional indicators (no more than ten) that each HEI may define. The common indicators are: (i) Strategy; (ii)

\textsuperscript{12} Sources: Center for Higher Education Policy Studies (CHEPS), 2011, Quality-related Funding, Performance Agreements, and Profiling in Higher Education – An International Comparative Study.
Advanced scholarships; (iii) Teaching, Learning, and Student Achievement; (iv) Community Development; (v) Administration; and (vi) Partnerships.

6. **The following properties are required of the indicators:**

   - Indicators should address both outputs and processes with reference to relevant input measures where appropriate. Indicators should enable an assessment to be made of both the delivered output and efforts to achieve the desired output.
   - Indicators should enable longitudinal comparison to be made over time, such that changes in performance can be assessed in subsequent PRFS exercises.
   - Indicators should allow evidence to be presented both qualitatively and quantitatively; and
   - As far as possible, each type of indicator should be agreed by both the UGC and institutions.

7. **An institution’s performance is assessed by the UGC’s Assessment Panel based on a written self-assessment of performance against the two types of indicators (common and optional) submitted by each institution.** The Panel assesses (i) the appropriateness of the criteria and benchmarks selected by the institution to measure its own performance in relation to its role; (ii) the sufficiency, quality and relevance of the evidence provided in the submission of performance against criteria; and (iii) the extent to which the submission as a whole is a reflective and evaluative account, and determines the final overall rating. The assessment categories for the first three steps are: Fail, Low, Medium or High. The rating from the first step cannot be improved upon by the ratings from the other two. The overall ratings are Low, Medium, High or Excellent. If a “Fail” judgement is made in the three steps outlined above, no overall PRFS rating is given.

8. **In 2012-2015, the UGC introduced a new funding mechanism based on Academic Development Proposals (ADP).** The ADP focuses more on strategic issues and performance rather than on a high level of detail of individual program offerings as in the PRFS. The PRFS experience was integrated into ADPs into four broad evaluation criteria: (i) Strategy, (ii) Teaching & Learning, (iii) Advanced Scholarship, and (iv) Community. Based on the ADP submitted by HEIs, the UGC then recommends to the Government how it should allocate the student places at different levels and hence allocate recurrent funding among HEIs. However, it should be noted that the adherence to the role of each institution remains a central theme in the assessment.
Costa Rica

9. In 2012, the Costa Rican government commenced a World Bank-funded project to introduce performance agreements called “Institutional Improvement Agreements (AMI)” with four of the five public universities in Costa Rica. The objectives of the project were to:

- help public universities to increase access by investing in infrastructure for teaching, learning and research;
- increase the quality of higher education by upgrading faculty qualifications and fostering evaluation and accreditation;
- increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and
- strengthen public universities’ management capacity and accountability by strengthening a culture of strategic long-term planning and measurement, target setting, accountability, and monitoring and evaluation.

10. Universities develop an Institutional Improvement Plan (PMI) in which each university defines specific targets for four strategic axes. These dimensions are: (i) Access; (ii) Quality; (iii) Innovation and scientific and technological development; and (iv) Institutional management. Through the project, universities receive USD 50 million (€44.57 million) to implement activities to achieve their targets. Each university also contributes USD 5.8-9.5 million (€5.2-8.5 million) counterpart fund.

11. In terms of assessing institutional performance, universities are responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective AMI. Universities then provide a monitoring and evaluation (M&E) report to the Project Coordinating Unit (UCP) twice a year. The UCP reports the M&E information directly to the Liaison Commission, in which both the government and universities are represented. The Liaison Commission establishes a Monitoring and Evaluation Committee that is composed of a team of specialists of recognized authority to provide an external and impartial assessment of Project implementation. The M&E Committee performs three qualitative evaluations of the Project: at the end of Year 1; at mid-term; and at the end of the five-year project implementation period.

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In the United States, 26 of 50 states have experimented with PBF to improve institutional effectiveness by linking state funding with institutional performance. The most intense period for this “experiment” spanned 1979 to 2007, and during these initial phases, most PBFs took on the form of formula funding, while performance agreements were relatively limited. PBF gained popularity in the 1990s, when states had sufficient funding, but many states transitioned away from PBF in the early 2000s as revenues declined. Other main reasons for its unpopularity included inflexibility to accommodate institutional differences and campus missions, lack of sustained support from political and campus leaders, and lack of reliable data for performance measurement.

The State of Louisiana allocates 15 percent of the operating budget for higher education institutions through a performance agreement system. It is expected that the proportion would go up to 25 percent. Institutions enter into performance agreements with the Louisiana Board of Regents, a state agency that coordinates all public higher education in Louisiana. These agreements establish annual performance targets that are unique to each institution’s mission and based on objectives established in the Granting Resources and Autonomies for Diplomas (GRAD) Act.

In exchange for meeting performance targets, institutions can receive permission to raise tuition by up to 10 percent without legislative approval. The performance targets encompass a variety of objectives relating to student performance, articulation and transfer, workforce development, and efficiency and accountability. The indicators include:

- Student success
- Change in retention
- Number of degree and certificate completers
- Increase passage rates on licensure and certification exams
- Articulation and transfer
- Workforce and economic development
  - Employment of degree and certificate earners
  - Research productivity
- Institutional efficiency and accountability


National Conference of State Legislatures
15. Based on the lessons learned at an earlier stage, more than 10 US states have re-designed their PBF models and have successfully implemented improved models. It is important to note, however, the effectiveness of PBF in the United States is not conclusive. Researchers and policymakers continue to explore the application of PBF in a number of higher education systems across the country, and whether performance agreements are the appropriate instrument to achieve the desired results.

Regional (European) Experience

16. Many countries in Europe face fiscal challenges and the efficiency and sustainability of funding public higher education is becoming increasingly important.16 As a cost-effective funding model, PBF has been encouraged at national and European levels. Based on various countries’ experiences in Europe, below are recommendations to policy makers and institutions:

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Performance-based budget in total recurrent funding</th>
<th>Performance Agreement (PA) in place with direct impact on an institution’s budget allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>27% - 32%</td>
<td>Yes</td>
</tr>
<tr>
<td>Austria</td>
<td>Almost 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>England</td>
<td>50%</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>75% - 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8% (now) – 10% (future)</td>
<td>Yes</td>
</tr>
<tr>
<td>North-Rhine Westphalia (Germany)</td>
<td>23%</td>
<td>Yes</td>
</tr>
<tr>
<td>Scotland</td>
<td>85%</td>
<td>Yes</td>
</tr>
<tr>
<td>Thuringia (Germany)</td>
<td>55%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems.

Croatia

Reimbursable Advisory Services
Assistance to the Ministry of Science, Education and Sports
for Higher Education Finance Reform

Expanding
Performance-Based Funding in Higher Education:
Institutional Roadmap—University of Rijeka
February 2017
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Any references to rankings, stated or implied, is within the sole context of the higher education system in Croatia and based on nonbinding criteria established by the World Bank for this engagement.
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### Abbreviations

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<th>Abbreviation</th>
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<tr>
<td>ADP</td>
<td>Academic Development Proposals</td>
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<td>AMI</td>
<td>Institutional Improvement Agreements</td>
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<td></td>
<td>(un Acuerdo de Mejoramiento Institucional)</td>
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<tr>
<td>ECTS</td>
<td>European Credit Transfer and Accumulation System</td>
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<td>EUA</td>
<td>European University Association</td>
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<td>FTE</td>
<td>Full-Time Equivalent</td>
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<td>HEI(s)</td>
<td>Higher Education Institution(s)</td>
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<td>ISVU</td>
<td>Higher Education Institutions Information System</td>
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<td>MoF</td>
<td>Ministry of Finance</td>
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<td>MSES</td>
<td>Ministry of Science, Education, and Sports</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<td>PA(s)</td>
<td>Performance Agreement(s)</td>
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<td>PBA</td>
<td>Performance-Based Agreement</td>
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<td>PBF</td>
<td>Performance-Based Funding/Financing</td>
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<td>PMI</td>
<td>Institutional Improvement Plan</td>
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<td></td>
<td>(un Plan de Mejoramiento Institucional)</td>
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<td>PRFS</td>
<td>Performance and Role-Related Funding Scheme</td>
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<td>RAS</td>
<td>Reimbursable Advisory Services</td>
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<td>STEM</td>
<td>Science, Technology, Engineering, and Mathematics</td>
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<td>TA</td>
<td>Technical Assistance</td>
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<td>UCP</td>
<td>Project Coordinating Unit</td>
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<td>UGC</td>
<td>University Grants Commission</td>
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<td>WB</td>
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Executive Summary

1. This report is the culmination of a year-long evaluation of the Croatian higher education sector’s readiness to expand the funding practices of the universities and research institutes to include greater levels of performance-based funding. Having gone through the pilot experience of the preliminary performance agreements of 2012-2015, both the institutions and the Ministry of Science, Education, and Sports (MSES) had deep insights in what they understood were the strengths and challenges of those agreements for their own organizations. The World Bank team sought to explore those localized experiences in the context of the global experiences with similar funding norms, to provide useful and relevant information about how to move forward with performance-based funding in Croatian higher education.17

2. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

3. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university and research institute costs as well as student tuition at universities should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

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17 For a sector-wide review of the preparedness of the all universities and the Institute of Physics to utilize expanded performance-based funding, please see the “Final Report on Institutional Readiness for Expanded Performance-Based Funding in Higher Education” (September 2016).
the relationship between the MSES and the institutions particularly in regard to personnel practices.

4. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated.

5. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

   - Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
   - Reforming internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
   - Collecting and using data more deliberately and effectively; and
   - Increasing efficiencies and developing additional revenue streams.

6. **A consistent willingness to engage in this process on the part of both MSES Representatives and university leaders has been vital for continued commitment to meet, discuss, and debate PBF and related issues.** Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

7. **Following a section that briefly highlights some of the most relevant global experiences with performance-based funding, the report presents the evaluation outcomes for the University of Rijeka.** The institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with university and research institute leaders—through site visits, collective workshops, and self-assessments.
completed by the leadership teams. The findings focus on three (3) key areas of institutional governance:

- Leadership and Strategic Planning
- Fiscal Management
- Effective Management of Data

8. The University of Rijeka’s more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements concludes the report. The roadmap includes a “scorecard” measurement on each of these three criteria, as well as options for addressing any identified challenges. This scorecard measurement is represented in the text as well as in the included infographics in the institution-specific evaluation section. Each roadmap includes recommendations across the three areas of institutional governance for the following time periods: (i) short-term (October 2016 – July 2017); (ii) medium-term (August 2017-July 2018); and (iii) long-term (August 2018 – onwards).

9. The road ahead is promising for expanding performance agreements to promote innovation and efficiency in Croatian higher education. All stakeholders identify important benefits from elements of the pilot and these elements can be further embedded in the funding policies in the future. Likewise, all stakeholders expressed some frustrations and challenges from the pilot, and understanding and addressing those will prove vital to successful implementation PBF in Croatia during the next rounds. This report serves to illustrate both what has worked and what needs reform, in order to lay the foundation for even more effective utilization of PBF and to maintain constructive partnerships between the higher education sector and the MSES.
Introduction

10. **Croatia’s education reforms in recent years have covered many aspects of the system, ranging from preschool to university.** The most recent education strategy – the Strategy for Education, Science, and Technology – was adopted in 2014, with a focus on reforming the education and training system. These areas of reform account for Croatia’s adverse demographic conditions of an aging and shrinking population and geographic characteristics, among others. According to the Strategy, education and science are the focal points of Croatia’s development plans.

11. **Demographic decline, aging, and lost years of employment remain significant barriers to growth in Croatia.** As the recovery from the lengthy recession continues, Croatia’s growth prospects remain vulnerable to adverse demographic trends. For Croatian living standards to converge with its Western European neighbors, the labor force must be more productive and become more flexible in a rapidly changing labor market, where the employment participation rate has experienced a downward trend since 2008. These challenges prompt the need to balance policy reforms in education and training, and the broader economy, in a constrained budgetary environment.

12. **In addition to demographic decline and aging, years of lost employment is also a significant problem for Croatia.** Among 25-34 year-olds, 35-44 year-olds, and 45-54 year olds, the average Croatian spends three years in unemployment or inactivity. This number doubles among 55-64 year olds. Among women, the average female in Croatia spends 17 years of her working life in unemployment or inactivity. This compares unfavorably with other European Union (EU) countries (Figure 1).

**Figure 5. Average years of lost employment for an individual, circa 2010**
13. **These adverse population trends have current and long-term implications for Croatia’s human capital and macroeconomic agenda to promote employment and sustainable economic reforms.** Human capital remains critical to Croatia’s service sector which dominates the country’s employment landscape.

14. **Croatia’s lack of economic growth in recent years is reflected in low labor productivity.** In addition to expanding employment by increasing the employment rate and the working life of individuals, productivity gains are central to addressing demographic decline and aging. While many European neighbors experienced low, but positive growth in productivity relative to the United States, Croatia’s productivity declined significantly (Figure 2), and now lags many EU countries.

**Figure 6. Productivity Levels in Europe compared to the United States**
15. **Croatia’s education system faces many challenges.** The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

16. **The implementation of performance-based funding (PBF) in higher education is a growing global trend as countries face persistent budgetary pressures in education and across their fiscal obligations.** In countries where the majority of higher education institutions (HEIs) receive public funding, PBF is a recognized tool to implement more efficient and adaptive funding norms. Moreover, PBF can help to achieve improved quality and relevance, research excellence, and better accountability and autonomy, among others important outcomes of finance reform. PBF allows for flexibility in selecting appropriate indicators to achieve wide-ranging goals.

17. **In 2010, the World Bank (WB) launched a regional higher education program to provide technical assistance (TA) to select European and Central Asian countries.** The program was designed and executed to deliver quality TA through knowledge products, capacity-building workshops, and policy advice in higher education. In the case of Croatia and at the behest of the Ministry of Science, Education, and Sports (MSES), the engagement centered on two main tasks: (i) financing mechanisms for higher education, and (2) an independent assessment of the University of Zagreb by the European University Association (EUA).

18. **In 2013, the WB’s involvement in Croatia’s higher education sector expanded with a request from the Ministry of Science, Education and Sports (MSES) to provide (reimbursable) advisory services (RAS) in higher education.** After a period of project design and consultation, the RAS became effective in May 2015. The ongoing advisory services focus specifically on improving the capacity of university to effectively implement more comprehensive performance-based contracts within the higher education system of Croatia.

19. **The role of the World Bank team in these advisory services has been to:**

   - provide technical expertise in evaluating global perspectives related to performance-based funding (PBF) in tertiary education, including knowledge of legislative frameworks and governance norms necessary for effective implementation of PBF models for university budgeting; and
serve as a neutral intermediary in identifying the challenges each selected institution would face in meeting the minimum criteria for enacting and managing broader use of performance-based funding in their operational budgets, and targeting directed support at 5 selected institutions (4 universities and 1 research institute) to promote meeting the minimum requirements as established by the collaboration between tertiary stakeholders and the government.

20. To perform its role under these advisory services, the WB has prepared the following three outputs:

- a comparative assessment of the PBF pilot in Croatia, utilizing international examples, with recommendations for improving the next round of PBF for the targeted institutions;
- a report detailing the assessment of all seven public universities and one public research institute (selected by the MSES), including shared challenges, overlapping and/or distinct issues, annexes with individual campus evaluations of impediments to the institutions’ ability to meet the minimal criteria and recommendations for reforms;
- an assessment of the legislative context for higher education finance and recommendations for reforms.

Timeline of Performance-Based Funding in Croatia

Workshops (2011)

21. To perform its role under these advisory services, the WB has prepared the following three outputs: The first workshop on PBF was held in February 2011. The WB and the MSES organized this workshop for Croatian universities focused on PBF and the European experience with PBF.

22. In July 2011, a second workshop was organized. This workshop focused on the testing and implementation of funding/performance agreements which was co-convened by the MSES and the WB. The workshop targeted the leadership of most public universities in Croatia, and all participants agreed to proceed with the proposed model of funding agreements as a basis for future budget allocations. There was widespread belief that the proposed changes to a performance-based system addressed the existing challenges in Croatian higher education. Many of the proposed changes in higher education, however, proved to be unpopular. The proposed reforms were directed to the Croatian Parliament for discussion, but higher education stakeholders asked for the proposals to be withdrawn. The proposed reforms were not passed.
Bilateral Contracts (2012-2015)

23. **Building on the work of the regional technical assistance program, PBF was introduced in Croatia’s higher education system in 2012.** Three-year bilateral contracts were the instruments used for PBF. The MSES entered into these contracts with each of the country’s eight (8) public universities.

24. **The 2012-2015 performance-funding contracts included the provision that the MSES would subsidize full-time students throughout the three-year time period.** Further, each university would adopt mandatory performance measures provided by MSES, as well as adopt performance measures selected by the universities (and research institutes where applicable). The list of mandatory MSES performance measures included:

- Increasing the number of students with disabilities;
- Increasing the number of students aged 25 and over;
- Increasing the number of students from lower socio-economic backgrounds;
- Increasing the number of graduates from science, technology, engineering, and math (STEM) fields;

Interim Bilateral Contracts (2015)

25. **Interim contracts were also signed in 2015 to ensure budget continuity, while broader and more substantive agreements were considered and agreed.** These reforms aimed to maximize the quality and accessibility of the higher education system. Full funding agreements will be implemented in another phase of reforms. The transition to PBF in Croatia coincides with the unforeseen implications of introducing two new public universities into the sector and anticipated fiscal challenges across the total national budget.

The Croatian Experience with Performance-Based Funding

26. **The adoption of PBF represented a major shift in thinking about the purpose of universities and how they should be funded.** This approach is a significant departure from long-standing expectations and practices that university costs as well as student tuition should be fully government funded. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about key issues. These issues include:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for social mobility for a greater diversity of students; and
• the relationship between the MSES and the universities particularly in regard to personnel practices.

27. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities received less funding overall from the government than they had anticipated.

28. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.

29. **A consistent willingness from both MSES Representatives and university/research institute leaders to pursue collaborative reforms has been vital for continued commitment to meet, explore, and debate PBF and related issues.** Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

30. **The following institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with institutional leaders—through site visits, collective workshops, and self-assessments completed by the leadership teams.** The findings focus on three (3) key areas of institutional governance: leadership and strategic planning, fiscal management, and the effective management and utilization of data. Each university and the research institute has received a more detailed evaluative report and
roadmap for effective preparation for the next round of performance agreements. The roadmaps for the universities include a “scorecard” measurement on each of these three criteria based on the self-assessments submitted by the leadership teams as well as the WB’s year-long engagement with university and research institute leaders. The roadmaps also contain options for addressing any identified challenges. The following section presents the findings and roadmap for addressing institutional challenges at the University of Rijeka.

University of Rijeka

31. The University of Rijeka enrols approximately 18,000 students in its 11 faculties and four departments. These faculties include Applied Arts, Civil Engineering, Economics, Engineering, Health Care Studies, Humanities and Social Sciences, Law, Maritime Studies, Medicine, Teacher Education, and Tourism and Hospitality Management. The departments are Biotechnology, Informatics, Mathematics, and Physics. The University is considered a semi-integrated organization since the faculties are their own separate legal entities, while the departments are integrated under the rectorate.

32. The University implemented its first strategic plan from 2007 – 2013, and included specific goals, objectives, and measurable indicators in this initial round. A major achievement during this period was the transition to functional integration through the development and definition of shared goals and objectives. The University held exercises with the deans, 13 external experts, and about 200 participants to develop the strategy. The strategic plan was approved by each Faculty Council and University Senate. There were action plans and annual reporting. Thus, the University created a foundation for a high level of functional integration across its constituent parts.

Experience with Performance-Based Funding

33. A new strategic plan has been adopted for the period from 2014 – 2020, which will also involve holding various faculties and departments accountable for performance. As a result, the University has the longest history in the use of internal monitoring of performance among Croatia’s public universities. The University reports that strategic planning is now part of its culture. Faculties develop their own goals and strategies based upon the University’s strategy plan and regular reports on achieved objectives are included in the process.

34. Approximately 70 percent of the University’s budget is provided by the state and most of that is dedicated to faculty salaries. The University’s annual budget for fiscal year 2014 was 250.7 million kuna (€32.5 million). The central administration takes 3 percent of any external funding generated by faculties for central activities, particularly building information.
technology (IT) infrastructure. The University’s management does not connect the budget directly to strategic goals, but enacts the same standards for all eleven faculties and four departments. For example, the standard for publications and faculty time spent with students is the same across all the faculties and departments.

Strengths

35. The University of Rijeka’s primary strength – experience and history in engaging in strategic planning and goal-setting – contributes toward its readiness to participate in the next round of performance funding in Croatia. The University has also been proactive in working with the MSES in developing and implementing performance-based contracts. This initiative demonstrates a deep understanding of the rationale and goals associated with PBF approaches. University leadership spoke regularly to their belief that for successful implementation of PBF at a university, the leadership must be invested in deeply understanding how the institution and its faculty, students, and staff function. This includes an understanding of budget management; goal-setting; motivation; vision; psychology; and a combination of incentives.

36. The University has established systems to track the number of students enrolled in various faculties and departments. In addition, these systems include the ability to track how many ECTS each student has earned.

37. The University of Rijeka’s additional strengths include accomplishments in setting and meeting specific strategic goals around student performance and STEM enrollment. At a national workshop held April 27, 2016, at the University of Zagreb, MSES representatives, university leaders, and WB Team members met to further discuss the most current status of PBF models and share experiences. The University of Rijeka provided an in-depth presentation on the institution’s history and experience with PBF and included charts and graphs detailing specific goals as well as results from 2013 to 2015 including, for example, the rate of students who attain 60 European Credit Transfer and Accumulation System (ECTS), completion rates in each of the STEM programs, and the number of grants provided to disadvantaged students. These results included both institution-wide measures as well as individual faculty measures.

38. The University also discussed the programs and services which were implemented to improve upon the initial numbers in each of the areas. This presentation demonstrated the University’s willingness and ability to identify and set measurable goals, to develop and implement intervention programs to reach target goals, and to regularly assess their progress. The University also showed courage in publicly showing this data, demonstrating transparency and confidence. Two specific examples include:
• The percentage of first-year students who completed 60 ECTS increased from 22.36 percent in 2013 to 27.62 percent in 2015. In reviewing institutional data, the university determined that helping students complete 60 ECTS during the first year was crucial, because students who attained 60 ECTS had higher rates of returning for their second year and higher rates of graduating in a timely manner. The University introduced various programs and services for this significant progress to occur. The University established programs to assess new student competencies in math and engineering to provide additional academic support to unprepared students; strengthened support systems for students and faculty, including mentorship and peer counseling; and supported efforts to give students more instruction time with professors.

• STEM enrollment increased by 14.6 percent (6,409 to 7,347 students) from 2013 to 2015. The University engaged with local high schools to develop interventions such as bridge programs, open houses, and job fairs to encourage high school student interest in pursuing STEM majors. These collaborations began more than 10 years ago and speak to the importance of the time and effort necessary to develop relationships across institutions.

Challenges

39. There is no common data on students with disabilities or student completion rates, however, so the ability to measure progress in these areas is limited. There are no reliable systems in place for the University to know with certainty how many disabled students or low SES students they enrol currently, because this information is voluntary and depends on the willingness of the student to apply as a member of the particular groups. The University intends to create a more comprehensive student database.

40. The University’s leadership team will undergo a change in a core position. The mandate of the sitting Rector is scheduled to end in 2017 after eight years leading the institution. This change represents both a challenge and an opportunity for the University to continue its existing policies which have contributed to a strong culture of strategic planning and goal-setting.

Recommendations for the University of Rijeka

I. Leadership and Strategic Planning

41. The University of Rijeka is a national and regional leader in developing and implementing institution-wide strategic plans and publicly discussing the results of its work.
• Short-term leadership and strategic planning recommendations (October 2016 – July 2017)

• Convene a University working group to oversee the activities related to the adoption and implementation of performance contracts and report regularly on the progress of the university regarding the performance contracts. The working group should include academic, administrative, and student representation from across the institution and report directly to the Rector. Focused on the three main areas of institutional readiness related to performance funding—leadership, fiscal systems, and data—the working group should immediately:
  o identify its membership,
  o draft its charter, roles and responsibilities; and
  o develop a project plan with timelines, key tasks, and responsible parties utilizing the following recommendations as a guide.

• Review national higher education planning reports including the Strategy for Science, Education, and Technology (2014-2020), the Smart Specialization Strategy (2016) and the Croatian Innovation Strategy (2014) to determine if and how the University’s existing strategic plan aligns with recently adopted national priorities.

• Prepare a list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with MSES, as the basis for the overall application of PBF at the University.

• Seek opportunities to present at national, regional, and international conferences providing other institutions and governments the opportunity to learn from the University of Rijeka’s work and progress on PBF and strategic planning.

• The University of Rijeka is encouraged to complete its development for faculty workload standards (e.g. expectations around teaching, research, volunteering, mentorship, professional projects) and carefully link these criteria to the University’s strategic plan. It follows that the University should plan to refine the tools, activities, and measures used to evaluate faculty performance.
• **Mid-term Leadership and Strategic Planning Recommendations (August 2017 – July 2018)**

  • Publish on the University website an easy-to-read and accessible summary outlining the University’s PBF goals and the annual results in reaching these goals.

  • Collaborate regularly with other higher education institutions and the MSES to share best practices, address concerns and issues, and assess the implementation of PBF through ongoing and open communications, which will be the cornerstone of effective PBF.

  • Organize meetings (at least two, to build upon progress) to share best practices with other institutions in integrating strategic plans with PBF goals, monitoring progress, and introducing new ideas and strategies.

  • Prepare a detailed review of the University’s strategic plan and its relationship with PBF, including priorities, activities, indicators, responsible parties, and budget to determine progress and alignment with MSES priorities and propose any revisions as needed. Include in this review an analysis and if applicable, an action plan with recommendations, discussing how the integration status of the University affects the successful implementation of PBF.

• **Long-term leadership and strategic planning recommendations (August 2018 and after)**

  • Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s PBF activities which may include assessing and changing performance indicators, evaluating the processes by which institutions were awarded, and strengthening communications between MSES and the University. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

  • Continue to solicit feedback on PBF best practices through regular examination of peer-reviewed research and participation in national, regional, and international meetings and conferences.

42. The following infographic summarizes the leadership and strategic planning recommendations for the University of Rijeka.
UNIVERSITY OF RIJEKA
LEADERSHIP & STRATEGIC PLANNING RECOMMENDATIONS

Short-term Recommendations (October 2016-July 2017)
- Convene a University Working Group to oversee the adoption and implementation of performance contracts
- Review national higher education planning reports
- Prepare a list of 4-6 institution-specific key performance indicators
- Seek opportunities to present at national, regional, and international conferences
- Complete its development for faculty workload standards

Long-term Recommendations (August 2018-onwards)
- Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s performance-based funding activities
- Continue to encourage feedback on best practices in performance-based funding

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING
- - - - -
FISCAL €kn - - - - -
DATA SYSTEMS - - - - -

TIMELINE
2016
2017
2018

Medium-term Recommendations (August 2017-July 2018)
- Publish an easy-to-read and accessible summary on the University website, outlining the University’s performance-based funding goals and the annual results
- Collaborate regularly with other higher education institutions and the MSES
- Organize (≥2) meetings to share best practices
- Prepare a detailed review of the University’s strategic plan and its relationship with performance-based funding

WORLD BANK GROUP
Education

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II. Fiscal

43. For institutions to fully adopt and integrate PBF, there must be a clear and discernible link between constituent performance on key indicators and internal resource allocations.

- **Short-term PBF-related fiscal recommendations (October 2016 – July 2017)**
  - Organize presentations from 1-2 other universities and an international expert to share best practices on internal resource allocation mechanisms.
  - Prepare detailed review of the strengths, weaknesses, and opportunities to enhance the alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by the MSES.

- **Mid-term PBF-related fiscal recommendations (August 2017 – July 2018)**
  - Clearly and unambiguously report institutional results to MSES on the University’s performance for each of its indicators in early June 2018.
  - Review and assess the financial implications of the University’s performance as it relates to the terms of the performance agreement. (MSES should make awards no later than the end of July 2018) and provide written feedback to the MSES.
  - Review and assess the University’s alignment between PBF awards and internal resource allocation decisions. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

- **Long-term PBF-related fiscal recommendations (August 2018 and after)**
  - Support the work of the MSES in assessing the financial management capacity-building needs of the University; ensure that appropriate parties participate in activities as offered by the MSES.

44. The following infographic summarizes the fiscal recommendations for the University of Rijeka.
UNIVERSITY OF RIJEKA
FISCAL RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING

FISCAL

DATA SYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)
Share best practices on internal resource allocation mechanisms by organizing presentations from 1-2 other universities and an international expert

Prepare detailed review of strengths, weaknesses, and opportunities to enhance alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by MSES

Medium-term Recommendations (August 2017-July 2018)
Report results to MSES on University’s performance for each indicator (in June 2018)
Review and assess MSES financial awarding of University’s performance and provide written feedback to MSES

Long-term Recommendations (August 2018-onwards)
Support work of MSES in assessing financial management capacity-building needs of the University

Review and assess University’s alignment between performance-based funding awards and internal resource allocation decisions
III. Data

45. **Data collection, reporting, and analysis requires systematic improvement** for a credible and reliable national PBF. Each institution has a role to play in strengthening its data resources and systems along with the MSES. The University has a culture of evidence-based decision-making, which underpins its strategic planning and assessments.

- **Short-term PBF-related data recommendations (October 2016 – July 2017)**
  - Prepare a list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with MSES.
  - Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis.\(^\text{18}\)
  - Conduct a needs assessment to determine key institutional data needed to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates).
  - Compare data definitions across faculties and departments to ensure University-wide and MSES consistency.

- **Mid-term and long-term data recommendations (August 2017 and beyond)**
  - Prepare an implementation plan to develop common data warehouses throughout the University.
  - Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations.

46. **The following infographic summarizes the data recommendations for the University of Rijeka.**

---

\(^{18}\) Although the University does not participate in U-Multirank, it may serve as a guide for supporting this measurement and analysis of performance.
UNIVERSITY OF RIJEKA

DATA RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING

FISCAL kn

DATASYSTEMS

Performance Agreement Scorecard:

- Leadership/Planning: 5/6
- Fiscal: 4/6
- Data Systems: 4/6

Short-term Recommendations (October 2016-July 2017)

- Prepare list of 4-6 institution-specific key performance indicators - which have transparent and clear measures - for review and negotiation with MSES
- Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis
- Conduct a needs assessment to determine key institutional data to be managed at the department, faculty, and central administration level (e.g., tracking of low-income students, "tracer" studies of graduates)
- Compare data definitions across faculties and departments to ensure University-wide and MSES consistency

Timeline:

- 2016
- 2017
- 2018


- Prepare an implementation plan to develop common data warehouses throughout the University
- Submit a briefing endorsed by University leadership (e.g., the senate, rectorate, council) on the key findings and recommendations

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Education

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Annex 1. Project Timeline and Activities

- **Consultations with MSES**
  - Jul 2015
  - Evaluation of Universities (8 Site Visits)
  - Self-Assessment Distributed to Universities
  - Self-Assessment Completed (Dubrovnik, Osijek, Pula)

- **Data Gathering Technical Mission**
  - Aug 2015
  - Project Launch + Workshop

- **Technical Missions**
  - Dec 2015
  - Evaluation Report + Progress Report
  - Mar
  - Workshop
  - Summary Report
  - Institutional Workshops
  - Self-Assessment Completed (Rijeka, Split)

- **Legislative Recommendations on PBF**
  - Apr
  - Project Extension Approved
  - Jun
  - Final Workshop

- **Diagnostic Assessment + Roadmaps**
  - Jul
  - Legislative Recommendations on PBF
  - Project Completion
  - Aug
  - Institutional Workshops

- **Annex 1. Project Timeline and Activities** (cont.)
Annex 2. Institutional Self-Assessment

Institutional Self-Assessment

Instructions: This self-assessment contains multiple choice questions, questions which require an attachment, and open-ended questions. Please provide a response for all questions. Open-ended questions require a typed response in a text box.

The text box will expand to fit your response. Please limit your written responses to 1,000 words per response.

Please save your responses before closing the document.

If there are any questions while completing the self-assessment please contact:
Roberta Bassett, Senior Education Specialist: rbassett@worldbank.org
Jason Weaver, Senior Education Specialist: jweaver2@worldbank.org

Please send the completed self-assessment and any additional supporting documents to rbassett@worldbank.org by November 6, 2015.

Management Readiness

1. A. Is there a university-wide strategic plan which has been approved by the faculty senate and will be in effect for at least the next three years?

Choose an item.

If YES, please provide a copy of the strategic plan and highlight the language that aligns with the five objectives identified as priorities by the Ministry of Science, Education and Sports. These five objectives are:

a. Increase low-income students
b. Increase STEM students
c. Increase first-year to second-year completion rates
d. Provide more grants to students
e. Increase effective management

B. For non-integrated universities only: Please provide a copy of existing strategic plans for autonomous faculties and highlight the language that aligns with the five objectives identified as priorities by the MSES.
2. Does the University have a system which financially rewards or sanctions faculties/departments based on their performance of meeting the goals in the strategic plan?

Choose an item.

*If YES, please explain the University’s guidelines.*

Click here to enter text.

---

3. Provide an outline of a communications and participation plan to educate and engage the university community on the performance agreement.

Click here to enter text.

---

4. Has the University’s current management team enacted any changes within the past year to increase efficiencies or improve performance?

Choose an item.

*If YES, please describe these changes, as well as the current and anticipated amount of cost-savings derived from these changes.*
5. Briefly describe the level of governance and financial integration at your University and what impact this may have on the negotiation and implementation of future performance agreements. Include how any potential challenges from the University’s organizational structure will be mitigated.

6. How many years has the rector served in his or her current position?

   Choose an item.

### Fiscal Readiness

7. A. Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for the entire University in the past year.

   Click here to enter text.
B. For non-integrated universities only: Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for autonomous faculties/departments in the past year.

Click here to enter text.

8. Does the University have a plan on how it may absorb potential declines in state funding over the next one to three years?

Choose an item.
If YES, describe the University’s plan on how the institution may absorb potential declines in state funding.

Click here to enter text.

9. Does the University have guidelines on how the central administration will allocate state funding to incentivize performance across all faculties and departments in alignment with the objectives outlined by the MSES?

Choose an item.
If YES, describe the University’s strategy on how the central administration will allocate state funding to incentivize performance.

Click here to enter text.
**Data Readiness**

10. Provide a brief description of the data collected by the University in the following areas:

   d. Student demographics (e.g. gender, date of birth)
   e. Student enrollment/retention (e.g. program of study, credits attempted)
   f. Student financial status (e.g. full-time/part-time, family income)

   Click here to enter text.

11. Explain the process by which data is collected, updated, and checked to audit validity.

   Click here to enter text.

12. Does the University collect data for any of the areas identified by MSES as priorities?

   Choose an item.

   If YES, please provide the definition of the data collected by the universities as it relates to:

   f. Low-income students
   g. Student enrollment in STEM fields
   h. Student retention rates (first-year to second year)
   i. Students who receive grants
   j. Effective university management
If NO, please explain the University’s plans to acquire the key data sources/systems to collect this data including a list of action items, completion dates, and budget.

13. Are indicators collected to monitor the implementation of strategies and achievement of goals in the University’s strategic plan?

Choose an item.
If YES, please provide three examples.

14. If the University could choose two specific performance indicators particular to its mission to be a part of the next performance agreement, please describe specifically what they would be; how they would be measured; and the annual targets.
<table>
<thead>
<tr>
<th>University Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15.</strong> <em>Please explain what assistance the University may require, if any, to successfully implement the next round of performance agreements. If the response includes additional funding or staff, please specifically indicate how the funding or staff will be utilized.</em></td>
</tr>
<tr>
<td>Click here to enter text.</td>
</tr>
</tbody>
</table>

| **16.** *Taking into account the state budget currently allocated to the University, how much do you estimate is still lacking as the minimum requirement necessary for running the University?* |
| Click here to enter text. |

| **17.** *Provide a list of the University costs which are not sufficiently covered by the state budget currently allocated.* |
18. Do you consider the revenues derived from student tuition fees to be sufficient for the University budget? Or should this part of the budget be reconsidered with the objective to increase access to the University?

19. A. What costs do you currently cover with the revenue derived from student tuition fees?

B. If the costs of running the University were covered entirely by the state budget, what would be the primary purpose of the revenue derived from student tuition fees?
20. *What is your estimation of the full cost of study for each student per year and per field?*

Click here to enter text.
Annex 3. Highlights of Best Practices and Lessons Learned
International Experience

Chile

1. To complement the existing norms of formula funding and competitive grants, in 2007, Chile introduced Performance-Based Agreements (PBAs) on a pilot basis to enhance the performance of higher education institutions. The goal and specific objectives of the PBAs are as follows:

   - **Goal:**
     - To align institutional missions with national and regional priorities, university autonomy with public accountability, and institutional performance with public funding.

   - **Specific objectives:**
     - To develop and strengthen the capacities and competencies at universities for outcome-based management in priority fields for Chile;
     - To improve the quality of the educational provision; and
     - To assure periodic, transparent and public measurement of outcomes;

2. The Government of Chile expanded the PBAs more broadly across the system, having seen various benefits. These benefits include the improvement of student retention rate and the increase in scientific and technological production. Minimum criteria to participate in PBA and factors for successful implementation at the government level and institutional level in Chile are included below.

   - **Minimum Criteria to Participate in PBA:**
     - Well-developed and officially approved Strategic Development Plan, including clear mission and vision, educational model, and a basic information management system
     - A satisfactory initial level of institutional development
     - Ensure full alignment of projects with the government’s higher education policies
     - Institutionalization of the PBA team for sustainability once external funding is completed

   - **Success Factors**

---

i. Government Level

- **Appropriate selection of HEI**, focusing on institutions which possess levels of development ensuring solvency and a capacity to undertake new strategic challenges;
- **Wide dissemination of the new PBA instrument**;
- **Renewal of governmental bodies**: Just as universities must make changes to improve their performance, government bodies and other national and international entities involved must also make changes in line with institutions to streamline processes;

ii. Institutional level

- **Selection of central themes** to institutional development and the fulfilment of its mission and goals;
- **Involvement of academic and administrative units** at an early stage;
- A team of highly professional negotiators;
- A **committed and motivated management team** which can build a feasible vision and integrate many people around common objectives, overcoming any possible differences and prejudices;

Hong Kong

3. **In Hong Kong, there are eight public institutions that are funded by the University Grants Commission (UGC).** This Commission is responsible for advising the government on the developmental and funding needs of higher education institutions. Since each institution has a significant degree of freedom to create its own profile, there is a tendency that many want to be research intensive, leading to a lack of diversification in the system.\(^\text{20}\)

4. **To encourage role differentiation, the UGC introduced a Performance and Role-Related Funding Scheme (PRFS) for the 2005-2008 (triennium).** Hence, the objective of the PRFS was to provide assurance that the institutions are adhering to their roles and that they perform well in those roles by linking funding allocation and performance against the expected role. Ten percent of recurrent public funds was set aside for this peer-review driven system of performance evaluation. HEIs could earn back 10 percent of their block grant if they adhered to their mission and performed well in their role.

5. **There are six common indicators set by the UGC for all HEIs and optional indicators (no more than ten) that each HEI may define.** The common indicators are: (i) Strategy; (ii) Advanced scholarships; (iii) Teaching, Learning, and Student Achievement; (iv) Community Development; (v) Administration; and (vi) Partnerships.


35
6. **The following properties are required of the indicators:**

- Indicators should address both outputs and processes with reference to relevant input measures where appropriate. Indicators should enable an assessment to be made of both the delivered output and efforts to achieve the desired output.
- Indicators should enable longitudinal comparison to be made over time, such that changes in performance can be assessed in subsequent PRFS exercises.
- Indicators should allow evidence to be presented both qualitatively and quantitatively; and
- As far as possible, each type of indicator should be agreed by both the UGC and institutions.

7. **An institution’s performance is evaluated by the UGC’s Assessment Panel based on a written self-assessment of performance against the two types of indicators (common and optional) submitted by each institution.** The Panel assesses (i) the appropriateness of the criteria and benchmarks selected by the institution to measure its own performance in relation to its role; (ii) the sufficiency, quality and relevance of the evidence provided in the submission of performance against criteria; and (iii) the extent to which the submission as a whole is a reflective and evaluative account, and determines the final overall rating. The assessment categories for the first three steps are: Fail, Low, Medium or High. The rating from the first step cannot be improved upon by the ratings from the other two. The overall ratings are Low, Medium, High or Excellent. If a “Fail” judgement is made in the three steps outlined above, no overall PRFS rating is given.

8. **In 2012-2015, the UGC introduced a new funding mechanism based on Academic Development Proposals (ADP).** The ADP focuses more on strategic issues and performance rather than on a high level of detail of individual program offerings as in the PRFS. The PRFS experience was integrated into ADPs into four broad evaluation criteria: (i) Strategy, (ii) Teaching & Learning, (iii) Advanced Scholarship, and (iv) Community. Based on the ADP submitted by HEIs, the UGC then recommends to the Government how it should allocate the student places at different levels and hence allocate recurrent funding among HEIs. However, it should be noted that the adherence to the role of each institution remains a central theme in the assessment.
Costa Rica

9. In 2012, the Costa Rican government commenced a World Bank-funded project to introduce performance agreements called “Institutional Improvement Agreements (AMI)” with four of the five public universities in Costa Rica.\(^{21}\) The objectives of the project were to:

- help public universities to increase access by investing in infrastructure for teaching, learning and research;
- increase the quality of higher education by upgrading faculty qualifications and fostering evaluation and accreditation;
- increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and
- strengthen public universities’ management capacity and accountability by strengthening a culture of strategic long-term planning and measurement, target setting, accountability, and monitoring and evaluation.

10. \textbf{Universities develop an Institutional Improvement Plan (PMI) in which each university defines specific targets for four strategic axes.} These dimensions are: (i) Access; (ii) Quality; (iii) Innovation and scientific and technological development; and (iv) Institutional management. Through the project, universities receive USD 50 million (€44.57 million) to implement activities to achieve their targets. Each university also contributes USD 5.8-9.5 million (€5.2-8.5 million) counterpart fund.

11. \textbf{In terms of assessing institutional performance, universities are responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective AMI.} Universities then provide a monitoring and evaluation (M&E) report to the Project Coordinating Unit (UCP) twice a year. The UCP reports the M&E information directly to the Liaison Commission, in which both the government and universities are represented. The Liaison Commission establishes a Monitoring and Evaluation Committee that is composed of a team of specialists of recognized authority to provide an external and impartial assessment of Project implementation. The M&E Committee performs three qualitative evaluations of the Project: at the end of Year 1; at mid-term; and at the end of the five-year project implementation period.

12. **In the United States, 26 of 50 states have experimented with PBF to improve institutional effectiveness by linking state funding with institutional performance.** The most intense period for this “experiment” spanned 1979 to 2007, and during these initial phases, most PBFs took on the form of formula funding, while performance agreements were relatively limited. PBF gained popularity in the 1990s, when states had sufficient funding, but many states transitioned away from PBF in the early 2000s as revenues declined. Other main reasons for its unpopularity included inflexibility to accommodate institutional differences and campus missions, lack of sustained support from political and campus leaders, and lack of reliable data for performance measurement.

13. **The State of Louisiana allocates 15 percent of the operating budget for higher education institutions through a performance agreement system.** It is expected that the proportion would go up to 25 percent. Institutions enter into performance agreements with the Louisiana Board of Regents, a state agency that coordinates all public higher education in Louisiana. These agreements establish annual performance targets that are unique to each institution’s mission and based on objectives established in the Granting Resources and Autonomies for Diplomas (GRAD) Act.

14. **In exchange for meeting performance targets, institutions can receive permission to raise tuition by up to 10 percent without legislative approval.** The performance targets encompass a variety of objectives relating to student performance, articulation and transfer, workforce development, and efficiency and accountability. The indicators include:

- Student success
  - Change in retention
  - Number of degree and certificate completers
  - Increase passage rates on licensure and certification exams
- Articulation and transfer
- Workforce and economic development
  - Employment of degree and certificate earners
  - Research productivity
- Institutional efficiency and accountability

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**Sources:**


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22. **National Conference of State Legislatures**
15. Based on the lessons learned at an earlier stage, more than 10 US states have redesigned their PBF models and have successfully implemented improved models. It is important to note, however, the effectiveness of PBF in the United States is not conclusive. Researchers and policymakers continue to explore the application of PBF in a number of higher education systems across the country, and whether performance agreements are the appropriate instrument to achieve the desired results.

Regional (European) Experience

16. Many countries in Europe face fiscal challenges and the efficiency and sustainability of funding public higher education is becoming increasingly important. As a cost-effective funding model, PBF has been encouraged at national and European levels. Based on various countries’ experiences in Europe, below are recommendations to policy makers and institutions:

Table A. The relative volume of performance-based funding as part of the government’s budget for higher education by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Performance-based budget in total recurrent funding</th>
<th>Performance Agreement (PA) in place with direct impact on an institution’s budget allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>27% - 32%</td>
<td>Yes</td>
</tr>
<tr>
<td>Austria</td>
<td>Almost 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>England</td>
<td>50%</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>75% - 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8% (now) – 10% (future)</td>
<td>Yes</td>
</tr>
<tr>
<td>North-Rhine Westphalia (Germany)</td>
<td>23%</td>
<td>Yes</td>
</tr>
<tr>
<td>Scotland</td>
<td>85%</td>
<td>Yes</td>
</tr>
<tr>
<td>Thuringia (Germany)</td>
<td>55%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems.

Croatia

Reimbursable Advisory Services
Assistance to the Ministry of Science, Education and Sports
for Higher Education Finance Reform

Expanding
Performance-Based Funding in Higher Education:
Institutional Roadmap—University of Split

February 2017

Education Global Practice | Europe and Central Asia Region
Disclaimer:

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Any references to rankings, stated or implied, is within the sole context of the higher education system in Croatia and based on nonbinding criteria established by the World Bank for this engagement.
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## Abbreviations

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<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>Academic Development Proposals</td>
</tr>
</tbody>
</table>
| AMI | Institutional Improvement Agreements  
(un Acuerdo de Mejoramiento Institucional) |
| ECTS | European Credit Transfer and Accumulation System |
| EUA | European University Association |
| FTE | Full-Time Equivalent |
| HEI(s) | Higher Education Institution(s) |
| ISVU | Higher Education Institutions Information System |
| MoF | Ministry of Finance |
| MSES | Ministry of Science, Education, and Sports |
| M&E | Monitoring and Evaluation |
| PA(s) | Performance Agreement(s) |
| PBA | Performance-Based Agreement |
| PBF | Performance-Based Funding/Financing |
| PMI | Institutional Improvement Plan  
(un Plan de Mejoramiento Institucional) |
| PRFS | Performance and Role-Related Funding Scheme |
| RAS | Reimbursable Advisory Services |
| STEM | Science, Technology, Engineering, and Mathematics |
| TA | Technical Assistance |
| UCP | Project Coordinating Unit |
| UGC | University Grants Commission |
| WB | World Bank |
Executive Summary

1. This report is the culmination of a year-long evaluation of the Croatian higher education sector’s readiness to expand the funding practices of the universities and research institutes to include greater levels of performance-based funding. Having gone through the pilot experience of the preliminary performance agreements of 2012-2015, both the institutions and the Ministry of Science, Education, and Sport (MSES) had deep insights in what they understood were the strengths and challenges of those agreements for their own organizations. The World Bank team sought to explore those localized experiences in the context of the global experiences with similar funding norms, to provide useful and relevant information about how to move forward with performance-based funding in Croatian higher education.  

2. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

3. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university and research institute costs as well as student tuition at universities should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

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25 For a sector-wide review of the preparedness of the all universities and the Institute of Physics to utilize expanded performance-based funding, please see the “Final Report on Institutional Readiness for Expanded Performance-Based Funding in Higher Education” (September 2016).
the relationship between the MSES and the institutions particularly in regard to personnel practices.

4. Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging. Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated.

5. Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF. These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.

6. A consistent willingness to engage in this process on the part of both MSES Representatives and university leaders has been vital for continued commitment to meet, discuss, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

7. Following a section that briefly highlights some of the most relevant global experiences with performance-based funding, the report presents the evaluation outcomes for the University of Split. The institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with university and research institute leaders—through site visits, collective workshops, and self-assessments.
completed by the leadership teams. The findings focus on three (3) key areas of institutional governance:

- Leadership and Strategic Planning
- Fiscal Management
- Effective Management of Data

8. The University of Split’s more detailed evaluation and roadmaps for effective preparation for the next round of performance agreements conclude the report. The roadmaps include a “scorecard” measurement on each of these three criteria, as well as options for addressing any identified challenges. This scorecard measurement is represented in the text as well in the included infographics presented throughout the institution-specific evaluation. Each roadmap includes recommendations across the three areas of institutional governance for the following time periods: (i) short-term (October 2016 – July 2017); (ii) medium-term (August 2017-July 2018); and (iii) long-term (August 2018 – onwards).

9. The road ahead is promising for expanding performance agreements to promote innovation and efficiency in Croatian higher education. All stakeholders identify important benefits from elements of the pilot and these elements can be further embedded in the funding policies in the future. Likewise, all stakeholders expressed some frustrations and challenges from the pilot, and understanding and addressing those will prove vital to successful implementation PBF in Croatia during the next rounds. This report serves to illustrate both what has worked and what needs reform, in order to lay the foundation for even more effective utilization of PBF and to maintain constructive partnerships between the higher education sector and the MSES.
Introduction

10. **Croatia’s education reforms in recent years have covered many aspects of the system, ranging from preschool to university.** The most recent education strategy – the Strategy for Education, Science, and Technology – was adopted in 2014, with a focus on reforming the education and training system. These areas of reform account for Croatia’s adverse demographic conditions of an aging and shrinking population and geographic characteristics, among others. According to the Strategy, education and science are the focal points of Croatia’s development plans.

11. **Demographic decline, aging, and lost years of employment remain significant barriers to growth in Croatia.** As the recovery from the lengthy recession continues, Croatia’s growth prospects remain vulnerable to adverse demographic trends. For Croatian living standards to converge with its Western European neighbors, the labor force must be more productive and become more flexible in a rapidly changing labor market, where the employment participation rate has experienced a downward trend since 2008. These challenges prompt the need to balance policy reforms in education and training, and the broader economy, in a constrained budgetary environment.

12. **In addition to demographic decline and aging, years of lost employment is also a significant problem for Croatia.** Among 25-34 year-olds, 35-44 year-olds, and 45-54 year olds, the average Croatian spends three years in unemployment or inactivity. This number doubles among 55-64 year olds. Among women, the average female in Croatia spends 17 years of her working life in unemployment or inactivity. This compares unfavorably with other European Union (EU) countries (Figure 1).

    **Figure 7. Average years of lost employment for an individual, circa 2010**
13. **These adverse population trends have current and long-term implications for Croatia’s human capital and macroeconomic agenda to promote employment and sustainable economic reforms.** Human capital remains critical to Croatia’s service sector which dominates the country’s employment landscape.

14. **Croatia’s lack of economic growth in recent years is reflected in low labor productivity.** In addition to expanding employment by increasing the employment rate and the working life of individuals, productivity gains are central to addressing demographic decline and aging. While many European neighbors experienced low, but positive growth in productivity relative to the United States, Croatia’s productivity declined significantly (Figure 2), and now lags many EU countries.

**Figure 8. Productivity Levels in Europe compared to the United States**
15. **Croatia’s education system faces many challenges.** The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

16. **The implementation of performance-based funding (PBF) in higher education is a growing global trend as countries face persistent budgetary pressures in education and across their fiscal obligations.** In countries where the majority of higher education institutions (HEIs) receive public funding, PBF is a recognized tool to implement more efficient and adaptive funding norms. Moreover, PBF can help to achieve improved quality and relevance, research excellence, and better accountability and autonomy, among others important outcomes of finance reform. PBF allows for flexibility in selecting appropriate indicators to achieve wide-ranging goals.

17. **In 2010, the World Bank (WB) launched a regional higher education program to provide technical assistance (TA) to select European and Central Asian countries.** The program was designed and executed to deliver quality TA through knowledge products, capacity-building workshops, and policy advice in higher education. In the case of Croatia and at the behest of the Ministry of Science, Education, and Sport (MSES), the engagement centered on two main tasks: (i) financing mechanisms for higher education, and (2) an independent assessment of the University of Zagreb by the European University Association (EUA).

18. **In 2013, the WB’s involvement in Croatia’s higher education sector expanded with a request from the Ministry of Science, Education and Sports (MSES) to provide (reimbursable) advisory services (RAS) in higher education.** After a period of project design and consultation, the RAS became effective in May 2015. The ongoing advisory services focus specifically on improving the capacity of universities and research institutes to effectively implement more comprehensive performance-based contracts within the higher education system of Croatia.

19. **The role of the World Bank team in these advisory services has been to:**

   - provide technical expertise in evaluating global perspectives related to performance-based funding (PBF) in tertiary education, including knowledge of legislative frameworks and governance norms necessary for effective implementation of PBF models for university budgeting; and
• serve as a neutral intermediary in identifying the challenges each selected institution would face in meeting the minimum criteria for enacting and managing broader use of performance-based funding in their operational budgets, and targeting directed support at 5 selected institutions (4 universities and 1 research institute) to promote meeting the minimum requirements as established by the collaboration between tertiary stakeholders and the government.

20. To perform its role under these advisory services, the WB has prepared the following three outputs:

• a comparative assessment of the PBF pilot in Croatia, utilizing international examples, with recommendations for improving the next round of PBF for the targeted institutions;
• a report detailing the assessment of all seven public universities and one public research institute (selected by the MSES), including shared challenges, overlapping and/or distinct issues, annexes with individual campus evaluations of impediments to the institutions’ ability to meet the minimal criteria and recommendations for reforms;
• an assessment of the legislative context for higher education finance and recommendations for reforms.

Timeline of Performance-Based Funding in Croatia

Workshops (2011)

21. To perform its role under these advisory services, the WB has prepared the following three outputs: The first workshop on PBF was held in February 2011. The WB and the MSES organized this workshop for Croatian universities focused on PBF and the European experience with PBF.

22. In July 2011, a second workshop was organized. This workshop focused on the testing and implementation of funding/performance agreements which was co-convened by the MSES and the WB. The workshop targeted the leadership of most public universities in Croatia, and all participants agreed to proceed with the proposed model of funding agreements as a basis for future budget allocations. There was widespread belief that the proposed changes to a performance-based system addressed the existing challenges in Croatian higher education. Many of the proposed changes in higher education, however, proved to be unpopular. The proposed reforms were directed to the Croatian Parliament for discussion, but higher education stakeholders asked for the proposals to be withdrawn. The proposed reforms were not passed.
Bilateral Contracts (2012-2015)

23. Building on the work of the regional technical assistance program, PBF was introduced in Croatia’s higher education system in 2012. Three-year bilateral contracts were the instruments used for PBF. The MSES entered into these contracts with each of the country’s eight (8) public universities.

24. The 2012-2015 performance-funding contracts included the provision that the MSES would subsidize full-time students throughout the three-year time period. Further, each university would adopt mandatory performance measures provided by MSES, as well as adopt performance measures selected by the universities (and research institutes where applicable). The list of mandatory MSES performance measures included:

- Increasing the number of students with disabilities;
- Increasing the number of students aged 25 and over;
- Increasing the number of students from lower socio-economic backgrounds;
- Increasing the number of graduates from science, technology, engineering, and math (STEM) fields;

Interim Bilateral Contracts (2015)

25. Interim contracts were also signed in 2015 to ensure budget continuity, while broader and more substantive agreements were considered and agreed. These reforms aimed to maximize the quality and accessibility of the higher education system. Full funding agreements will be implemented in another phase of reforms. The transition to PBF in Croatia coincides with the unforeseen implications of introducing two new public universities into the sector and anticipated fiscal challenges across the total national budget.

The Croatian Experience with Performance-Based Funding

26. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university costs as well as student tuition should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:
the government’s funding limitations imposed by the country’s low economic growth;

the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

the role of institutional autonomy with regard to relationship between the MSES and the institutions around issues of institutional management, including personnel practices and use of self-generated income.

27. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration between the institutions and MSES, and support from MSES over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF. Specifically, university performance on agreed-upon indicators was not evaluated by the MSES resulting in a breakdown of the all-important relationship of between performance and fiscal rewards which undergirds any performance-based funding contract. Complicating this matter was the disappointment that the universities and research institutes received less funding overall from the government than they had anticipated. Finally, three significant changes in the national government over the past few years—since PBF was introduced—have meant parallel changes in MSES leadership resulting in uneven forward movement. The explicit and detailed findings related to the practical implications of these challenges for future reforms are detailed in the institution-specific sections below.

28. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while, internally, a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification, ownership and measurement of campus-wide goals;

- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan objectives and accomplishments;

- Collecting and using data more deliberately and effectively; and

- Increasing efficiencies and developing additional revenue streams.
29. A consistent willingness from both MSES Representatives and university/research institute leaders to pursue collaborative reforms has been vital for continued commitment to meet, explore, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

30. The following institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with institutional leaders—through site visits, collective workshops, and self-assessments completed by the leadership teams. The findings focus on three (3) key areas of institutional governance: leadership and strategic planning, fiscal management, and the effective management and utilization of data. Each university and the research institute has received a more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements. The roadmaps for the universities include a “scorecard” measurement on each of these three criteria based on the self-assessments submitted by the leadership teams as well as the WB’s year-long engagement with university and research institute leaders. The roadmaps also contain options for addressing any identified challenges. The following section presents the findings and roadmap for addressing institutional challenges at the University of Split.

University of Split

31. The University of Split, located in the second largest city in Croatia, was established in 1974. The University enrolls approximately 20,000 students in its thirteen faculties – architecture/geodesy, arts, Catholic theology, chemistry and technology, civil engineering, economics, electrical engineering/mechanical engineering/nautical architecture, kinesiology, law, maritime studies, philosophy, science, and medicine), and four departments (forensic sciences, health studies, marine studies, and professional studies). The University’s governance structure is non-integrated; each faculty is a separate registered public entity which has significant control over its own budgetary and data collection practices. Departments fall directly under the purview of the rectorate.

32. The University adopted its most recent strategic plan in early 2016. The strategic plan includes four main objectives: to improve student standards, needs, and mobility; develop faculty teaching skills; advance science and research development; and improve the internal organization of the University. The University has a main commission as well as sub-commissions for each faculty to assist in developing complimentary strategic plans across all faculties. While the University does not yet have a fully developed system to provide financial
rewards or sanction faculties and departments based on their performance, such a system is part of the new University strategic plan.

33. The leadership team has taken steps to increase the number of students enrolled in STEM programs. The approach adopted to achieve this goal is the provision of an additional stipend to students, which will be financed by University funds. The strategy also includes teaching more classes in English, especially in the STEM fields. The University also intends to attract more international students, as well as increase the number of students participating in sports opportunities, as well as cultural and humanitarian experiences.
Experience with Performance-Based Funding

34. The University expressed frustration regarding its experience with the first round of 2012 performance agreements. The University asserts that there were no practical results, and its leadership received no support in managing the university. The 2012 contract stated that the institution had funding for each student which is disputed by the University.

35. The University notes that the performance agreements provided a clear sense of its budget in light of its position regarding its allocation from the State budget. The PA provided an opportunity for the University to attempt to reconcile its budget and expenditure with regard to the internal organization of the institution i.e. the legal independence of faculties and units.

Strengths

36. The University strives to strengthen ties with local and regional businesses and industry where there is more synergy and collaboration. Employees of companies can be mentors to University students, and these employees may be able to undertake advanced studies or lecture at the University. The University is focused on fostering entrepreneurial businesses, and presented a long-term vision where a faculty member and students could obtain a loan from the University to start a business. The University would subsequently receive a portion of profits from successful endeavours.

37. The PAs contributed to a shift in the University’s approach regarding strategic planning. In addition to the Strategic Plan, the University has also adopted an inaugural Action Plan. Previously, Action Plans were informal. Its leadership notes that although the PAs were introduced a few years ago, sincere consideration for planning has emerged only within the last year due to the adoption of the University’s Action Plan. It is also encouraging to note that the University included its own internal performance-based funding system within its new strategic plan. As a result, it will be important to coordinate these efforts along with the new MSES contracts.

Challenges

38. The leadership team stated that the non-integrated legal structure is a key challenge which fosters resistance to change. The University intends to implement initiatives for improved functional integration such as exchanging professors across faculties, centralizing data collection, and sharing resources such as science equipment and computer centres. The
transition toward functional integration, however, does not include financial integration, with the exception of the 3 percent of revenues from faculties diverted to the rectorate.

39. **A large share of the University’s revenue is derived from the State budget.** Similar to other public universities in Croatia, this reliance on State funding presents an ongoing challenge, particularly within the context of declining State funding for the higher education sector, an increase in the number of public universities, and demographic decline. The University understands that the government will not be able to provide additional funding in the future and is actively seeking to diversify its revenue streams. The University is hoping that partner companies will eventually become donors.

40. **Although each Faculty has a system to track its finances, the Faculties are not directly integrated into the Rectorate.** As a result, there are challenges facing the leadership team in governing and managing the finances of each Faculty. The leadership team is unable to monitor finances and student enrolment in real time. There are no information management systems to link the University of Split – or other public universities in Croatia – directly to MSES. The link between universities and MSES relies on written reports.

41. **The University does not track its graduates, but acknowledges the importance of tracer studies.** The University is in the process of establishing agreements with its alumni organization to track graduates. However, the lack of financial support has constrained efforts to undertake a relevant initiative regarding graduates and their performance in the labour market.

42. **Compliance with the Bologna Process has created a challenge for the University's teaching requirements.** The Bologna Process resulted in an increase in the number of teaching hours required. The number of teachers, however, has remained relatively unchanged. The University acknowledges the need for smaller classes to comply with the average student-teacher ratio of 30 students per teacher.

43. **Related to student-teacher ratios, the University enrolls the second highest number of students in Croatian higher education.** There is an estimated shortage in the number of teaching staff of roughly 200 full-time equivalent (FTE) positions. To mitigate the impact of this shortfall in FTE positions, the University hires adjunct and consulting faculty.

**Recommendations for the University of Split**

I. **Leadership and Strategic Planning**
44. The University of Split has undertaken several strategic initiatives to progress toward functional integration, and diversify its revenue sources. Within the context of these initiatives and the challenges facing the University, there are a number of recommended next steps:

- **Short-term leadership and strategic planning recommendations (October 2016 – July 2017)**
  
  - Convene a University working group to oversee the activities related to the adoption and implementation of performance contracts and report regularly on the progress of the university regarding the performance contracts. The working group should include academic, administrative, and student representation from across the institution and report directly to the Rector. Focused on the three main areas of institutional readiness related to performance funding—leadership, fiscal systems, and data—the working group should immediately:
    - identify its membership,
    - draft its charter, roles and responsibilities; and
    - develop a project plan with timelines, key tasks, and responsible parties utilizing the following recommendations as a guide.

  - **Review national higher education planning reports** including the Strategy for Science, Education, and Technology (2014-2020), the Smart Specialization Strategy (2016) and the Croatian Innovation Strategy (2014) to determine if and how the University’s existing strategic plan aligns with recently adopted national priorities.

  - **Prepare a list of 4-6 institution-specific key performance indicators** which have transparent and clear measures for review and negotiation with MSES, as the basis for the overall application of PBF at the University.

  - The University of Split is strongly encouraged to **strengthen and accelerate its efforts to achieve functional integration** to improve the governance of the institution, within the context of achieving the objectives of its Action Plan.

  - The University of Split is encouraged to **evaluate the workloads and expectations of all faculty members** and examine how to most appropriately link faculty performance with the objectives of PBF.
- **Mid-term Leadership and Strategic Planning Recommendations (August 2017 – July 2018)**
  - Publish on the University website an easy-to-read and accessible summary outlining the University’s PBF goals and the annual results in reaching these goals.
  - Collaborate regularly with other higher education institutions and the MSES to share best practices, address concerns and issues, and assess the implementation of PBF through ongoing and open communications, which will be the cornerstone of effective PBF.
  - Organize meetings (at least two, to build upon progress) to share best practices with other institutions in integrating strategic plans with PBF goals, monitoring progress, and introducing new ideas and strategies.
  - Prepare a detailed review of the University’s strategic plan and its relationship with PBF, including priorities, activities, indicators, responsible parties, and budget to determine progress and alignment with MSES priorities and propose any revisions as needed. Include in this review an analysis and if applicable, an action plan with recommendations, discussing how the integration status of the University affects the successful implementation of PBF.

- **Long-term leadership and strategic planning recommendations (August 2018 and after)**
  - Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s PBF activities which may include assessing and changing performance indicators, evaluating the processes by which institutions were awarded, and strengthening communications between MSES and the University. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).
  - Continue to solicit feedback on PBF best practices through regular examination of peer-reviewed research and participation in national, regional, and international meetings and conferences.

45. The following infographic summarizes the leadership and strategic planning recommendations for the University of Split.
UNIVERSITY OF SPLIT
LEADERSHIP & STRATEGIC PLANNING RECOMMENDATIONS

Short-term Recommendations (October 2016-July 2017)
- Convene a University Working Group to oversee the adoption and implementation of performance contracts
- Review national higher education planning reports
- Prepare a list of 4-6 institution-specific key performance indicators
- Strengthen and accelerate efforts to achieve functional integration
- Evaluate workloads and expectations of all faculty members

Long-term Recommendations (August 2018-onwards)
- Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s performance-based funding activities
- Continue to encourage feedback on best practices in performance-based funding

Medium-term Recommendations (August 2017-July 2018)
- Publish an easy-to-read and accessible summary on the University website, outlining the University’s performance-based funding goals and the annual results
- Collaborate regularly with other higher education institutions and the MSes
- Organize (≥2) meetings to share best practices
- Prepare a detailed review of the University’s strategic plan, and its relationship with performance-based funding

TIMELINE
2016
2017
2018

WORLD BANK GROUP
Education
II. Fiscal

46. For institutions to fully adopt and integrate PBF, there must be a clear and discernible link between constituent performance on key indicators and internal resource allocations.

- **Short-term PBF-related fiscal recommendations (October 2016 – July 2017)**
  - Organize presentations from 1-2 other universities and an international expert to **share best practices on internal resource allocation mechanisms**.
  - **Prepare detailed review** of the strengths, weaknesses, and opportunities to enhance the alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by the MSES.
  - The University of Split’s Action Plan focuses on objectives for 2016. However, it appears that progress has been delayed in establishing a central procurement system. Although indirectly related to PBF, as part of its efforts to achieve functional integration, the University is encouraged to **prioritize efforts to implement central procurement** for use by its constituent units and departments.

- **Mid-term PBF-related fiscal recommendations (August 2017 – July 2018)**
  - Clearly and unambiguously report institutional results to MSES on the University’s performance for each of its indicators in early June 2018.
  - Review and assess the financial implications of the University’s performance as it relates to the terms of the performance agreement. (MSES should make awards no later than the end of July 2018) and provide written feedback to the MSES.
  - Review and assess the University’s alignment between PBF awards and internal resource allocation decisions. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

- **Long-term PBF-related fiscal recommendations (August 2018 and after)**
  - Support the work of the MSES in **assessing the financial management capacity-building needs** of the University; ensure that appropriate parties participate in activities as offered by the MSES.
The following infographic summarizes the fiscal recommendations for the University of Split.

**UNIVERSITY OF SPLIT**

**FISCAL RECOMMENDATIONS**

**PERFORMANCE AGREEMENT SCORECARD**

LEADERSHIP/PLANNING

FISCAL €

DATASYSTEMS

**TIMELINE**

**Short-term Recommendations (October 2016-July 2017)**

- Share best practices on internal resource allocation mechanisms by organizing presentations from 1-2 other universities and an international expert
- Prepare detailed review of strengths, weaknesses, and opportunities to enhance alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by MSES
- Prioritize efforts to implement central procurement for use by constituent units and departments

**Medium-term Recommendations (August 2017-July 2018)**

- Report results to MSES on University’s performance for each indicator (in June 2018)
- Review and assess MSES financial awarding of University’s performance and provide written feedback to MSES
- Review and assess University’s alignment between performance-based funding awards and internal resource allocation decisions

**Long-term Recommendations (August 2018-onwards)**

- Support work of MSES in assessing financial management capacity-building needs of the University

**WORLD BANK GROUP**

**Education**
III. Data

48. **Data collection, reporting, and analysis requires systematic improvement** for a credible and reliable national PBF. Each institution has a role to play in strengthening its data resources and systems along with the MSES.

- **Short-term PBF-related data recommendations (October 2016 – July 2017)**
  - Prepare list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with the MSES.
  - Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis.\(^{26}\)
  - Conduct a needs assessment to determine key institutional data needed to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates).
  - Compare data definitions across faculties and departments to ensure University-wide and MSES consistency.

- **Mid-term and long-term data recommendations (August 2017 and beyond)**
  - Prepare an implementation plan to develop common data warehouses throughout the University.
  - Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations.
  - For the University of Split, graduate tracking would provide an empirical basis for addressing the relationship between higher education and the world of work. The University is encouraged to explore examples of regional and international tracer studies to determine which components are most relevant to its strategic goals and to serve as a national example in linking higher education to employment opportunities.

\(^{26}\) Although the University does not participate in U-Multirank, it may serve as a guide for supporting this measurement and analysis of performance.
The following infographic summarizes the data recommendations for the University of Split.

### Short-term Recommendations (October 2016-July 2017)
- Prepare list of 4-6 institution-specific key performance indicators - which have transparent and clear measures - for review and negotiation with MSES
- Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis
- Conduct a needs assessment to determine key institutional data to be managed at the department, faculty, and central administration level (e.g., tracking of low-income students, “tracer” studies of graduates)
- Compare data definitions across faculties and departments to ensure University-wide and MSES consistency

### Medium-term and Long-term Recommendations (August 2017-July 2018)
- Prepare an implementation plan to develop common data warehouses throughout the University
- Submit a briefing endorsed by University leadership (e.g., the senate, rectorate, council) on the key findings and recommendations
- Explore examples of regional and international tracer studies
Annex 1. Project Timeline and Activities
Annex 2. Institutional Self-Assessment

Institutional Self-Assessment

Instructions: This self-assessment contains multiple choice questions, questions which require an attachment, and open-ended questions. Please provide a response for all questions. Open-ended questions require a typed response in a text box.

The text box will expand to fit your response. Please limit your written responses to 1,000 words per response.

Please save your responses before closing the document.

If there are any questions while completing the self-assessment please contact:
Roberta Bassett, Senior Education Specialist: rbassett@worldbank.org
Jason Weaver, Senior Education Specialist: jweaver2@worldbank.org

Please send the completed self-assessment and any additional supporting documents to rbassett@worldbank.org by November 6, 2015.

Management Readiness

1. A. Is there a university-wide strategic plan which has been approved by the faculty senate and will be in effect for at least the next three years?

Choose an item.

If YES, please provide a copy of the strategic plan and highlight the language that aligns with the five objectives identified as priorities by the Ministry of Science, Education and Sports. These five objectives are:

a. Increase low-income students
b. Increase STEM students
c. Increase first-year to second-year completion rates
d. Provide more grants to students
e. Increase effective management

B. For non-integrated universities only: Please provide a copy of existing strategic plans for autonomous faculties and highlight the language that aligns with the five objectives identified as priorities by the MSES.
2. Does the University have a system which financially rewards or sanctions faculties/departments based on their performance of meeting the goals in the strategic plan?

Choose an item.

*If YES, please explain the University’s guidelines.*

Click here to enter text.

3. Provide an outline of a communications and participation plan to educate and engage the university community on the performance agreement.

Click here to enter text.

4. Has the University’s current management team enacted any changes within the past year to increase efficiencies or improve performance?

Choose an item.

*If YES, please describe these changes, as well as the current and anticipated amount of cost-savings derived from these changes.*
5. Briefly describe the level of governance and financial integration at your University and what impact this may have on the negotiation and implementation of future performance agreements. Include how any potential challenges from the University’s organizational structure will be mitigated.

6. How many years has the rector served in his or her current position?

Choose an item.

**Fiscal Readiness**

10. A. Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for the entire University in the past year.
B. For non-integrated universities only: Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for autonomous faculties/departments in the past year.

Click here to enter text.

11. Does the University have a plan on how it may absorb potential declines in state funding over the next one to three years?

Choose an item.

If YES, describe the University’s plan on how the institution may absorb potential declines in state funding.

Click here to enter text.

12. Does the University have guidelines on how the central administration will allocate state funding to incentivize performance across all faculties and departments in alignment with the objectives outlined by the MSES?

Choose an item.

If YES, describe the University’s strategy on how the central administration will allocate state funding to incentivize performance.

Click here to enter text.
Data Readiness

10. Provide a brief description of the data collected by the University in the following areas:

   g. Student demographics (e.g. gender, date of birth)
   h. Student enrollment/retention (e.g. program of study, credits attempted)
   i. Student financial status (e.g. full-time/part-time, family income)

   Click here to enter text.

11. Explain the process by which data is collected, updated, and checked to audit validity.

   Click here to enter text.

12. Does the University collect data for any of the areas identified by MSES as priorities?

   Choose an item.
   If YES, please provide the definition of the data collected by the universities as it relates to:

   k. Low-income students
   l. Student enrollment in STEM fields
   m. Student retention rates (first-year to second year)
   n. Students who receive grants
   o. Effective university management
If NO, please explain the University’s plans to acquire the key data sources/systems to collect this data including a list of action items, completion dates, and budget.

13. Are indicators collected to monitor the implementation of strategies and achievement of goals in the University’s strategic plan?

Choose an item.

If YES, please provide three examples.

14. If the University could choose two specific performance indicators particular to its mission to be a part of the next performance agreement, please describe specifically what they would be; how they would be measured; and the annual targets.
15. Please explain what assistance the University may require, if any, to successfully implement the next round of performance agreements. If the response includes additional funding or staff, please specifically indicate how the funding or staff will be utilized.

16. Taking into account the state budget currently allocated to the University, how much do you estimate is still lacking as the minimum requirement necessary for running the University?

17. Provide a list of the University costs which are not sufficiently covered by the state budget currently allocated.
18. Do you consider the revenues derived from student tuition fees to be sufficient for the University budget? Or should this part of the budget be reconsidered with the objective to increase access to the University?

Click here to enter text.

19. A. What costs do you currently cover with the revenue derived from student tuition fees?

Click here to enter text.

B. If the costs of running the University were covered entirely by the state budget, what would be the primary purpose of the revenue derived from student tuition fees?

Click here to enter text.
20. What is your estimation of the full cost of study for each student per year and per field?

Click here to enter text.
Annex 3. Highlights of Best Practices and Lessons Learned
International Experience

Chile

1. To complement the existing norms of formula funding and competitive grants, in 2007, Chile introduced Performance-Based Agreements (PBAs) on a pilot basis to enhance the performance of higher education institutions. The goal and specific objectives of the PBAs are as follows:

   - **Goal:**
     - To align institutional missions with national and regional priorities, university autonomy with public accountability, and institutional performance with public funding.

   - **Specific objectives:**
     - To develop and strengthen the capacities and competencies at universities for outcome-based management in priority fields for Chile;
     - To improve the quality of the educational provision; and
     - To assure periodic, transparent and public measurement of outcomes;

2. The Government of Chile expanded the PBAs more broadly across the system, having seen various benefits. These benefits include the improvement of student retention rate and the increase in scientific and technological production. Minimum criteria to participate in PBA and factors for successful implementation at the government level and institutional level in Chile are included below.

   - **Minimum Criteria to Participate in PBA:**
     - Well-developed and officially approved **Strategic Development Plan**, including clear mission and vision, educational model, and a basic information management system
     - A satisfactory **initial level of institutional development**
     - Ensure full **alignment of projects with the government’s higher education policies**
     - **Institutionalization of the PBA team** for sustainability once external funding is completed

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Success Factors

i. Government Level

- **Appropriate selection of HEI**, focusing on institutions which possess levels of development ensuring solvency and a capacity to undertake new strategic challenges;
- **Wide dissemination of the new PBA instrument**;
- **Renewal of governmental bodies**: Just as universities must make changes to improve their performance, government bodies and other national and international entities involved must also make changes in line with institutions to streamline processes;

ii. Institutional level

- Selection of **central themes** to institutional development and the fulfilment of its mission and goals;
- **Involvement of academic and administrative units** at an early stage;
- A team of highly professional negotiators;
- A **committed and motivated management team** which can build a feasible vision and integrate many people around common objectives, overcoming any possible differences and prejudices;

Hong Kong

3. **In Hong Kong, there are eight public institutions that are funded by the University Grants Commission (UGC).** This Commission is responsible for advising the government on the developmental and funding needs of higher education institutions. Since each institution has a significant degree of freedom to create its own profile, there is a tendency that many want to be research intensive, leading to a lack of diversification in the system.  

4. **To encourage role differentiation, the UGC introduced a Performance and Role-Related Funding Scheme (PRFS) for the 2005-2008 (triennium).** Hence, the objective of the PRFS was to provide assurance that the institutions are adhering to their roles and that they perform well in those roles by linking funding allocation and performance against the expected role. Ten percent of recurrent public funds was set aside for this peer-review driven system of performance evaluation. HEIs could earn back 10 percent of their block grant if they adhered to their mission and performed well in their role.

5. **There are six common indicators set by the UGC for all HEIs and optional indicators (no more than ten) that each HEI may define.** The common indicators are: (i) Strategy; (ii)

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28 **Sources:** Center for Higher Education Policy Studies (CHEPS), 2011, *Quality-related Funding, Performance Agreements, and Profiling in Higher Education – An International Comparative Study*.  

35
Advanced scholarships; (iii) Teaching, Learning, and Student Achievement; (iv) Community Development; (v) Administration; and (vi) Partnerships.

6. **The following properties are required of the indicators:**

   - Indicators should address both outputs and processes with reference to relevant input measures where appropriate. Indicators should enable an assessment to be made of both the delivered output and efforts to achieve the desired output.
   - Indicators should enable longitudinal comparison to be made over time, such that changes in performance can be assessed in subsequent PRFS exercises.
   - Indicators should allow evidence to be presented both qualitatively and quantitatively; and
   - As far as possible, each type of indicator should be agreed by both the UGC and institutions.

7. **An institution’s performance is evaluated by the UGC’s Assessment Panel based on a written self-assessment of performance against the two types of indicators (common and optional) submitted by each institution.** The Panel assesses (i) the appropriateness of the criteria and benchmarks selected by the institution to measure its own performance in relation to its role; (ii) the sufficiency, quality and relevance of the evidence provided in the submission of performance against criteria; and (iii) the extent to which the submission as a whole is a reflective and evaluative account, and determines the final overall rating. The assessment categories for the first three steps are: Fail, Low, Medium or High. The rating from the first step cannot be improved upon by the ratings from the other two. The overall ratings are Low, Medium, High or Excellent. If a “Fail” judgement is made in the three steps outlined above, no overall PRFS rating is given.

8. **In 2012-2015, the UGC introduced a new funding mechanism based on Academic Development Proposals (ADP).** The ADP focuses more on strategic issues and performance rather than on a high level of detail of individual program offerings as in the PRFS. The PRFS experience was integrated into ADPs into four broad evaluation criteria: (i) Strategy, (ii) Teaching & Learning, (iii) Advanced Scholarship, and (iv) Community. Based on the ADP submitted by HEIs, the UGC then recommends to the Government how it should allocate the student places at different levels and hence allocate recurrent funding among HEIs. However, it should be noted that the adherence to the role of each institution remains a central theme in the assessment.
9. In 2012, the Costa Rican government commenced a World Bank-funded project to introduce performance agreements called “Institutional Improvement Agreements (AMI)” with four of the five public universities in Costa Rica.29 The objectives of the project were to:

- help public universities to increase access by investing in infrastructure for teaching, learning and research;
- increase the quality of higher education by upgrading faculty qualifications and fostering evaluation and accreditation;
- increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and
- strengthen public universities’ management capacity and accountability by strengthening a culture of strategic long-term planning and measurement, target setting, accountability, and monitoring and evaluation.

10. Universities develop an Institutional Improvement Plan (PMI) in which each university defines specific targets for four strategic axes. These dimensions are: (i) Access; (ii) Quality; (iii) Innovation and scientific and technological development; and (iv) Institutional management. Through the project, universities receive USD 50 million (€44.57 million) to implement activities to achieve their targets. Each university also contributes USD 5.8-9.5 million (€5.2-8.5 million) counterpart fund.

11. In terms of assessing institutional performance, universities are responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective AMI. Universities then provide a monitoring and evaluation (M&E) report to the Project Coordinating Unit (UCP) twice a year. The UCP reports the M&E information directly to the Liaison Commission, in which both the government and universities are represented. The Liaison Commission establishes a Monitoring and Evaluation Committee that is composed of a team of specialists of recognized authority to provide an external and impartial assessment of Project implementation. The M&E Committee performs three qualitative evaluations of the Project: at the end of Year 1; at mid-term; and at the end of the five-year project implementation period.

In the United States, 26 of 50 states have experimented with PBF to improve institutional effectiveness by linking state funding with institutional performance. The most intense period for this “experiment” spanned 1979 to 2007, and during these initial phases, most PBFs took on the form of formula funding, while performance agreements were relatively limited. PBF gained popularity in the 1990s, when states had sufficient funding, but many states transitioned away from PBF in the early 2000s as revenues declined. Other main reasons for its unpopularity included inflexibility to accommodate institutional differences and campus missions, lack of sustained support from political and campus leaders, and lack of reliable data for performance measurement.

The State of Louisiana allocates 15 percent of the operating budget for higher education institutions through a performance agreement system. It is expected that the proportion would go up to 25 percent. Institutions enter into performance agreements with the Louisiana Board of Regents, a state agency that coordinates all public higher education in Louisiana. These agreements establish annual performance targets that are unique to each institution’s mission and based on objectives established in the Granting Resources and Autonomies for Diplomas (GRAD) Act.

In exchange for meeting performance targets, institutions can receive permission to raise tuition by up to 10 percent without legislative approval. The performance targets encompass a variety of objectives relating to student performance, articulation and transfer, workforce development, and efficiency and accountability. The indicators include:

- Student success
  - Change in retention
  - Number of degree and certificate completers
  - Increase passage rates on licensure and certification exams
- Articulation and transfer
- Workforce and economic development
  - Employment of degree and certificate earners
  - Research productivity
- Institutional efficiency and accountability


National Conference of State Legislatures
15. Based on the lessons learned at an earlier stage, more than 10 US states have redesigned their PBF models and have successfully implemented improved models. It is important to note, however, the effectiveness of PBF in the United States is not conclusive. Researchers and policymakers continue to explore the application of PBF in a number of higher education systems across the country, and whether performance agreements are the appropriate instrument to achieve the desired results.

Regional (European) Experience

16. Many countries in Europe face fiscal challenges and the efficiency and sustainability of funding public higher education is becoming increasingly important.\textsuperscript{32} As a cost-effective funding model, PBF has been encouraged at national and European levels. Based on various countries’ experiences in Europe, below are recommendations to policy makers and institutions:

Table A. The relative volume of performance-based funding as part of the government’s budget for higher education by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Performance-based budget in total recurrent funding</th>
<th>Performance Agreement (PA) in place with direct impact on an institution’s budget allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>27% - 32%</td>
<td>Yes</td>
</tr>
<tr>
<td>Austria</td>
<td>Almost 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>England</td>
<td>50%</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>75% - 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8% (now) – 10% (future)</td>
<td>Yes</td>
</tr>
<tr>
<td>North-Rhine Westphalia (Germany)</td>
<td>23%</td>
<td>Yes</td>
</tr>
<tr>
<td>Scotland</td>
<td>85%</td>
<td>Yes</td>
</tr>
<tr>
<td>Thuringia (Germany)</td>
<td>55%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems.

\textsuperscript{32} Sources: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems; Claeys-Kulik, Anna-Lena & Estermann, Thomas, 2015, Define Thematic Report: Performance-Based Funding of Universities in Europe, Brussels: European University Association.
Croatia

Reimbursable Advisory Services
Assistance to the Ministry of Science, Education and Sports
for Higher Education Finance Reform

Expanding
Performance-Based Funding in Higher Education:
Institutional Roadmap—University of Zagreb
February 2017
Disclaimer:

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This report does not necessarily represent the position of the European Union or the Government of Croatia.

Any references to rankings, stated or implied, is within the sole context of the higher education system in Croatia and based on nonbinding criteria established by the World Bank for this engagement.
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**Abbreviations**

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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>Academic Development Proposals</td>
</tr>
<tr>
<td>AMI</td>
<td>Institutional Improvement Agreements</td>
</tr>
<tr>
<td>(AMI)</td>
<td>(un Acuerdo de Mejoramiento Institucional)</td>
</tr>
<tr>
<td>ECTS</td>
<td>European Credit Transfer and Accumulation System</td>
</tr>
<tr>
<td>EUA</td>
<td>European University Association</td>
</tr>
<tr>
<td>FTE</td>
<td>Full-Time Equivalent</td>
</tr>
<tr>
<td>HEI(s)</td>
<td>Higher Education Institution(s)</td>
</tr>
<tr>
<td>ISVU</td>
<td>Higher Education Institutions Information System</td>
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<td>MoF</td>
<td>Ministry of Finance</td>
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<td>MSES</td>
<td>Ministry of Science, Education, and Sports</td>
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<td>Monitoring and Evaluation</td>
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<tr>
<td>PA(s)</td>
<td>Performance Agreement(s)</td>
</tr>
<tr>
<td>PBA</td>
<td>Performance-Based Agreement</td>
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<tr>
<td>PBF</td>
<td>Performance-Based Funding/Financing</td>
</tr>
<tr>
<td>PMI</td>
<td>Institutional Improvement Plan</td>
</tr>
<tr>
<td>(PMI)</td>
<td>(un Plan de Mejoramiento Institucional)</td>
</tr>
<tr>
<td>PRFS</td>
<td>Performance and Role-Related Funding Scheme</td>
</tr>
<tr>
<td>RAS</td>
<td>Reimbursable Advisory Services</td>
</tr>
<tr>
<td>STEM</td>
<td>Science, Technology, Engineering, and Mathematics</td>
</tr>
<tr>
<td>TA</td>
<td>Technical Assistance</td>
</tr>
<tr>
<td>UCP</td>
<td>Project Coordinating Unit</td>
</tr>
<tr>
<td>UGC</td>
<td>University Grants Commission</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
</tbody>
</table>
Executive Summary

1. This report is the culmination of a year-long evaluation of the Croatian higher education sector’s readiness to expand the funding practices of the universities and research institutes to include greater levels of performance-based funding. Having gone through the pilot experience of the preliminary performance agreements of 2012-2015, both the institutions and the Ministry of Science, Education, and Sports (MSES) had deep insights in what they understood were the strengths and challenges of those agreements for their own organizations. The World Bank team sought to explore those localized experiences in the context of the global experiences with similar funding norms, to provide useful and relevant information about how to move forward with performance-based funding in Croatian higher education.33

2. Croatia’s education system faces many challenges. The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

3. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university and research institute costs as well as student tuition at universities should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:

- the government’s funding limitations imposed by the country’s low economic growth;
- the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and

33 For a sector-wide review of the preparedness of the all universities and the Institute of Physics to utilize expanded performance-based funding, please see the “Final Report on Institutional Readiness for Expanded Performance-Based Funding in Higher Education” (September 2016).
• the relationship between the MSES and the institutions particularly in regard to personnel practices.

4. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration and support over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university and research institute representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF as well as their disappointment that the universities and research institutes received less funding overall from the government than they had anticipated.

5. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.

6. **A consistent willingness to engage in this process on the part of both MSES Representatives and university leaders has been vital for continued commitment to meet, discuss, and debate PBF and related issues.** Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

7. **Following a section that briefly highlights some of the most relevant global experiences with performance-based funding, the report presents the evaluation outcomes for the University of Zagreb.** The institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with university and research institute leaders—through site visits, collective workshops, and self-assessments
completed by the leadership teams. The findings focus on three (3) key areas of institutional governance:

- Leadership and Strategic Planning
- Fiscal Management
- Effective Management of Data

8. The University of Zagreb’s more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements concludes the report. The roadmap includes a “scorecard” measurement on each of these three criteria, as well as options for addressing any identified challenges. This scorecard measurement is represented in the text as well in the included infographics within the institution-specific evaluation section. Each roadmap includes recommendations across the three areas of institutional governance for the following time periods: (i) short-term (October 2016 – July 2017); (ii) medium-term (August 2017-July 2018); and (iii) long-term (August 2018 – onwards).

9. The road ahead is promising for expanding performance agreements to promote innovation and efficiency in Croatian higher education. All stakeholders identify important benefits from elements of the pilot and these elements can be further embedded in the funding policies in the future. Likewise, all stakeholders expressed some frustrations and challenges from the pilot, and understanding and addressing those will prove vital to successful implementation PBF in Croatia during the next rounds. This report serves to illustrate both what has worked and what needs reform, in order to lay the foundation for even more effective utilization of PBF and to maintain constructive partnerships between the higher education sector and the MSES.
Introduction

10. **Croatia’s education reforms in recent years have covered many aspects of the system, ranging from preschool to university.** The most recent education strategy – the Strategy for Education, Science, and Technology – was adopted in 2014, with a focus on reforming the education and training system. These areas of reform account for Croatia’s adverse demographic conditions of an aging and shrinking population and geographic characteristics, among others. According to the Strategy, education and science are the focal points of Croatia’s development plans.

11. **Demographic decline, aging, and lost years of employment remain significant barriers to growth in Croatia.** As the recovery from the lengthy recession continues, Croatia’s growth prospects remain vulnerable to adverse demographic trends. For Croatian living standards to converge with its Western European neighbors, the labor force must be more productive and become more flexible in a rapidly changing labor market, where the employment participation rate has experienced a downward trend since 2008. These challenges prompt the need to balance policy reforms in education and training, and the broader economy, in a constrained budgetary environment.

12. **In addition to demographic decline and aging, years of lost employment is also a significant problem for Croatia.** Among 25-34 year-olds, 35-44 year-olds, and 45-54 year olds, the average Croatian spends three years in unemployment or inactivity. This number doubles among 55-64 year olds. Among women, the average female in Croatia spends 17 years of her working life in unemployment or inactivity. This compares unfavorably with other European Union (EU) countries (Figure 1).

*Figure 9. Average years of lost employment for an individual, circa 2010*
13. These adverse population trends have current and long-term implications for Croatia’s human capital and macroeconomic agenda to promote employment and sustainable economic reforms. Human capital remains critical to Croatia’s service sector which dominates the country’s employment landscape.

14. Croatia’s lack of economic growth in recent years is reflected in low labor productivity. In addition to expanding employment by increasing the employment rate and the working life of individuals, productivity gains are central to addressing demographic decline and aging. While many European neighbors experienced low, but positive growth in productivity relative to the United States, Croatia’s productivity declined significantly (Figure 2), and now lags many EU countries.

Figure 10. Productivity Levels in Europe compared to the United States
15. **Croatia’s education system faces many challenges.** The most important challenge is to improve the quality and relevance of education to respond better to labor market needs and reduce the skills gap. In a time of demographic decline, higher education, lifelong learning (LLL), and adult education will be key. As workers become fewer, they will need to be more productive and stay flexible in a rapidly changing labor market. The higher education sector therefore stands to benefit from a more performance-oriented approach; improved governance, organization, and financing; increased completion rates and student mobility; and the financial and legal integration of Croatia’s largest universities.

16. **The implementation of performance-based funding (PBF) in higher education is a growing global trend as countries face persistent budgetary pressures in education and across their fiscal obligations.** In countries where the majority of higher education institutions (HEIs) receive public funding, PBF is a recognized tool to implement more efficient and adaptive funding norms. Moreover, PBF can help to achieve improved quality and relevance, research excellence, and better accountability and autonomy, among others important outcomes of finance reform. PBF allows for flexibility in selecting appropriate indicators to achieve wide-ranging goals.

17. **In 2010, the World Bank (WB) launched a regional higher education program to provide technical assistance (TA) to selected European and Central Asian countries.** The program was designed and executed to deliver quality TA through knowledge products, capacity-building workshops, and policy advice in higher education. In the case of Croatia and at the behest of the Ministry of Science, Education, and Sport (MSES), the engagement centered on two main tasks: (i) financing mechanisms for higher education, and (2) an independent assessment of the University of Zagreb by the European University Association (EUA).

18. **In 2013, the WB’s involvement in Croatia’s higher education sector expanded with a request from the Ministry of Science, Education and Sports (MSES) to provide (reimbursable) advisory services (RAS) in higher education.** After a period of project design and consultation, the RAS became effective in May 2015. The ongoing advisory services focus specifically on improving the capacity of universities and research institutes to effectively implement more comprehensive performance-based contracts within the higher education system of Croatia.

19. **The role of the World Bank team in these advisory services has been to:**

   - provide technical expertise in evaluating global perspectives related to performance-based funding (PBF) in tertiary education, including knowledge of legislative frameworks and governance norms necessary for effective implementation of PBF models for university budgeting; and
serve as a neutral intermediary in identifying the challenges each selected institution would face in meeting the minimum criteria for enacting and managing broader use of performance-based funding in their operational budgets, and targeting directed support at 5 selected institutions (4 universities and 1 research institute) to promote meeting the minimum requirements as established by the collaboration between tertiary stakeholders and the government.

20. To perform its role under these advisory services, the WB has prepared the following three outputs:

- a comparative assessment of the PBF pilot in Croatia, utilizing international examples, with recommendations for improving the next round of PBF for the targeted institutions;
- a report detailing the assessment of all seven public universities and one public research institute (selected by the MSES), including shared challenges, overlapping and/or distinct issues, annexes with individual campus evaluations of impediments to the institutions’ ability to meet the minimal criteria and recommendations for reforms;
- an assessment of the legislative context for higher education finance and recommendations for reforms.

Timeline of Performance-Based Funding in Croatia

Workshops (2011)

21. To perform its role under these advisory services, the WB has prepared the following three outputs: The first workshop on PBF was held in February 2011. The WB and the MSES organized this workshop for Croatian universities focused on PBF and the European experience with PBF.

22. In July 2011, a second workshop was organized. This workshop focused on the testing and implementation of funding/performance agreements which was co-convened by the MSES and the WB. The workshop targeted the leadership of most public universities in Croatia, and all participants agreed to proceed with the proposed model of funding agreements as a basis for future budget allocations. There was widespread belief that the proposed changes to a performance-based system addressed the existing challenges in Croatian higher education. Many of the proposed changes in higher education, however, proved to be unpopular. The proposed reforms were directed to the Croatian Parliament for discussion, but higher education stakeholders asked for the proposals to be withdrawn. The proposed reforms were not passed.
Bilateral Contracts (2012-2015)

23. Building on the work of the regional technical assistance program, PBF was introduced in Croatia’s higher education system in 2012. Three-year bilateral contracts were the instruments used for PBF. The MSES entered into these contracts with each of the country’s eight (8) public universities.

24. The 2012-2015 performance-funding contracts included the provision that the MSES would subsidize full-time students throughout the three-year time period. Further, each university would adopt mandatory performance measures provided by MSES, as well as adopt performance measures selected by the universities (and research institutes where applicable). The list of mandatory MSES performance measures included:

- Increasing the number of students with disabilities;
- Increasing the number of students aged 25 and over;
- Increasing the number of students from lower socio-economic backgrounds;
- Increasing the number of graduates from science, technology, engineering, and math (STEM) fields;

Interim Bilateral Contracts (2015)

25. Interim contracts were also signed in 2015 to ensure budget continuity, while broader and more substantive agreements were considered and agreed. These reforms aimed to maximize the quality and accessibility of the higher education system. Full funding agreements will be implemented in another phase of reforms. The transition to PBF in Croatia coincides with the unforeseen implications of introducing two new public universities into the sector and anticipated fiscal challenges across the total national budget.

The Croatian Experience with Performance-Based Funding

26. The adoption of PBF represented a major shift in both fiscal and strategic support for the universities and research institutes, and how they should be funded. This approach proved to be a significant departure from long-standing expectations and practices that university costs as well as student tuition should be fully government funded, as some level of cost-sharing was embedded in the strategic planning for performance-based funding. Though cost-sharing need not be fundamental to performance-based funding, as the government considered mechanisms for reduced spending, developing focused areas of cost-sharing within higher education became an option Croatia chose to consider. These changes have also catalyzed more nuanced and necessary conversations within Croatia’s higher education community about several key considerations in the strategic reform of the sector, including:
the government’s funding limitations imposed by the country’s low economic growth;  
the responsibility of public universities in providing the knowledge and skills needed for both labor market relevance and the promotion of social mobility for a greater diversity of students; and  
the role of institutional autonomy with regard to relationship between the MSES and the institutions around issues of institutional management, including personnel practices and use of self-generated income.

27. **Similar to many other countries that are implementing and refining different models of PBF worldwide, Croatia’s experience has been challenging.** Croatia’s experience with PBF will continue to require significant collaboration between the institutions and MSES, and support from MSES over the coming several years to adopt a wide-scale functioning and integrated PBF system. Most of the university representatives interviewed during this project expressed various degrees of frustration and confusion concerning the implementation of the first round of PBF. Specifically, university performance on agreed-upon indicators was not evaluated by the MSES resulting in a breakdown of the all-important relationship of between performance and fiscal rewards which undergirds any performance-based funding contract. Complicating this matter was the disappointment that the universities and research institutes received less funding overall from the government than they had anticipated. Finally, three significant changes in the national government over the past few years—since PBF was introduced—have meant parallel changes in MSES leadership resulting in uneven forward movement. The explicit and detailed findings related to the practical implications of these challenges for future reforms are detailed in the institution-specific sections below.

28. **Despite these challenges over the past several years in Croatia, institutions have exhibited strengths in areas critical to effective utilization of PBF.** These strengths provide a foundation on which to build upon more systematically. The Ministry has demonstrated a continued willingness to engage with universities and research institutes to co-develop the country’s PBF agreements while, internally, a growing number of universities and research institutes are taking the following steps:

- Working with faculties to develop strategic plans which include the identification, ownership and measurement of campus-wide goals;
- Reforming the internal allocation process of universities and research institutes to be more aligned with strategic plan objectives and accomplishments;
- Collecting and using data more deliberately and effectively; and
- Increasing efficiencies and developing additional revenue streams.
29. A consistent willingness from both MSES Representatives and university/research institute leaders to pursue collaborative reforms has been vital for continued commitment to meet, explore, and debate PBF and related issues. Throughout the WB Team’s RAS activities, members from Croatia’s higher education community regularly attended workshops and meetings, completed requests for information; and engaged in a number of interviews. This bodes well for future collaboration especially in light of the reality that the Croatian economic situation will likely remain challenged for the coming years and will thus need to rely upon all sectors of society to be creative and innovative in meeting the country’s needs.

30. The following institutional evaluative findings and roadmaps for potential reform initiatives were developed through a year-long engagement with institutional leaders—through site visits, collective workshops, and self-assessments completed by the leadership teams. The findings focus on three (3) key areas of institutional governance: leadership and strategic planning, fiscal management, and the effective management and utilization of data. Each university and the research institute has received a more detailed evaluative report and roadmap for effective preparation for the next round of performance agreements. The roadmaps for the universities include a “scorecard” measurement on each of these three criteria, as well as options for addressing any identified challenges. The following section presents the findings and roadmap for addressing institutional challenges at the University of Zagreb.

University of Zagreb

31. The University of Zagreb is the oldest – and largest – public university in Croatia. The university enrols approximately 73,000 students – roughly half of all public university enrolment in Croatia. It has a non-integrated governance structure, which includes 29 faculties across the fields of the biomedical sciences, biotechnology, engineering, humanities, natural sciences, and social sciences as well as three arts academies.

Experience with Performance-Based Funding

Weaknesses

32. The lack of clarity associated with the implementation of the pilot PBF agreement was further complicated by the separate but related issue of the University receiving fewer governmental resources in its first year of PBF implementation compared to the previous (non-pilot) year. The Croatian government and public universities are struggling to introduce a new form of funding within a context of past and anticipated declines in national fiscal commitment to public higher education. Further, the higher education landscape became more competitive in the past 18 months with the advent of two new public universities resulting in a
decline in the budget per university. There is a much-needed national discussion about the appropriate allocation level to public universities and how the financing responsibility should be shared among students and their families, the state/taxpayers, and institutions to ensure that necessary resources are available. There is a further need for PBF contracts to be developed clearly and for their implementation to be carried out responsibility by all parties.

33. **The University asserts that the inputs and outputs of the PBF pilot were mismatched.** Inputs were measured according to teaching activities, while outputs were measured according to research activities. The University expressed concerns that the proposed follow-up round of performance-based contracts could result in an allocation that is significantly less than the prior year’s overall allocation.

34. **Further, given the variability in the size and subject areas of the various faculties, the cost of delivery of services varies significantly across faculties.** The existing PBAs, however, treat them relatively equally, which can place many of the faculties at a fiscal disadvantage.

(Potential) Strengths

35. **Research has always been one of the University’s strengths.** The University continues to be a leader in research despite severe cuts in funding of roughly 40 percent in recent years. The University of Zagreb may play an important and unique leadership role in ushering in an effective and equitable PBF process in Croatia. The University’s history and cultural significance provide the institution with the opportunity to help move the country forward in implementing a successful PBF basis of comprehensively funding the higher education sector.

36. **The University is recognized as an institution that does more than simply educate students.** The ‘added value’ of the University—in addition to its core responsibilities of teaching and research—emerges from its resources which include many components with wider social significance, such as the National Library, the Botanical Garden, and Academies of Arts with their concert halls and theaters. The successful adoption of PBF at the University of Zagreb will provide a national pathway for all of public higher education. The University’s size and complexity of missions make it the most challenging of all of Croatia’s higher educations to implement PBF. If the University is willing and able to collaborate with the MSES to do so, it will create a model for the rest of the Croatian universities.

Challenges

37. **The University is not allowed to make hiring decisions nor is it financially autonomous, despite its position as the flagship university in the higher education sector.** The University must seek permission from the MSES, but this requirement is not stated in the law. The law
states that universities can freely decide how to allocate financial resources. This is not the case in practice, however.

38. **Despite enrolling the majority of Croatia’s higher education students, the University does not have systems to track graduates.** In certain fields where the number of graduates is low – such as speech therapy, chemistry, and physics – the University is able to track graduates. However, this is not the case in fields where the number of graduates is high – such as medicine, business, and law.

39. **The University of Zagreb’s leadership team asserts that the institution is too large to achieve integration.** While outside the mandate of this assessment of application of PBF into the Croatian higher education sector, it is nonetheless imperative that the discussion about institutional integration continue between the MSES and the University. The two main reasons given by the institution regarding the challenge in moving toward integration are the well-established traditions and international visibility of its Faculties. Though these are reasonably identified challenges, they do not, inherently, eliminate the possibility of functional/managerial integration, even if areas of academic integration may prove difficult to consider or enact. So, while the leadership team advocates for the University to remain as a decentralised institution, with existing administrative centralisation in the rectorate, identifying which areas of operations would benefit from integration and which would benefit most from remaining independent remains a vital consideration for achieving internal efficiencies.

**Recommendations for the University of Zagreb**

I. **Leadership and Strategic Planning**

- **Short-term leadership and strategic planning recommendations (October 2016 – July 2017)**
  - Convene a University working group to oversee the activities related to the adoption and implementation of performance contracts and report regularly on the progress of the university regarding the performance contracts. The working group should include academic, administrative, and student representation from across the institution and report directly to the Rector. Focused on the three main areas of institutional readiness related to performance funding—leadership, fiscal systems, and data—the working group should immediately:
    - identify its membership,
    - draft its charter, roles and responsibilities; and
    - develop a project plan with timelines, key tasks, and responsible parties utilizing the following recommendations as a guide.
• Review national higher education planning reports including the Strategy for Science, Education, and Technology (2014-2020), the Smart Specialization Strategy (2016) and the Croatian Innovation Strategy (2014) to determine if and how the University’s existing strategic plan aligns with recently adopted national priorities.

• Prepare a list of 4-6 institution-specific key performance indicators which have transparent and clear measures for review and negotiation with MSES, as the basis for the overall application of PBF at the University.

• The University of Zagreb is encouraged to revise and update its strategic plan to incorporate specific and measurable performance indicators. Further, in acknowledgement of the University’s size and complexity, a clear communications and participation plan should be developed to educate and engage the numerous faculties and departments about the characteristics, expectations, and processes associated with performance-based funding and their relationship to the institution’s strategic plan. Moreover, the institutions should consider further embedded performance-based funding via the use of internal performance contracts, which would provide the mechanisms for aligning internal strategic goals with the university’s broader goals.

• Mid-term Leadership and Strategic Planning Recommendations (August 2017 – July 2018)

  • Publish on the University website an easy-to-read and accessible summary outlining the University’s PBF goals and the annual results in reaching these goals.

  • Collaborate regularly with other higher education institutions and the MSES to share best practices, address concerns and issues, and assess the implementation of PBF through ongoing and open communications, which will be the cornerstone of effective PBF.

  • Organize meetings (at least two, to build upon progress) to share best practices with other institutions in integrating strategic plans with PBF goals, monitoring progress, and introducing new ideas and strategies.

  • Prepare a detailed review of the University’s strategic plan and its relationship with PBF, including priorities, activities, indicators, responsible parties, and budget to determine progress and alignment with MSES.
priorities and propose any revisions as needed. Include in this review an analysis and if applicable, an action plan with recommendations, discussing how the integration status of the University affects the successful implementation of PBF.

- **Long-term leadership and strategic planning recommendations (August 2018 and after)**
  - Issue an annual review and recommendations to MSES on the implementation and outcomes associated with the prior year’s PBF activities which may include assessing and changing performance indicators, evaluating the processes by which institutions were awarded, and strengthening communications between MSES and the University. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

  - **Continue to solicit feedback on PBF best practices** through regular examination of peer-reviewed research and participation in national, regional, and international meetings and conferences.

40. The following infographic summarizes the leadership and strategic planning recommendations for the University of Zagreb.
UNIVERSITY OF ZAGREB
LEADERSHIP & STRATEGIC PLANNING RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING
FISCAL € kn
DATA SYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)
- Convene a University Working Group to oversee the adoption and implementation of performance contracts
- Review national higher education planning reports
- Prepare a list of 4-6 institution-specific key performance indicators
- Revise and update its strategic plan to incorporate specific and measurable performance indicators

Medium-term Recommendations (August 2017-July 2018)
- Publish an easy-to-read and accessible summary on the University website, outlining the University’s performance-based funding goals and the annual results
- Collaborate regularly with other higher education institutions and the MSER
- Organize (≥2) meetings to share best practices
- Prepare a detailed review of the University’s strategic plan and its relationship with performance-based funding

Long-term Recommendations (August 2018-onwards)
- Issue an annual review and recommendations to MSER on the implementation and outcomes associated with the prior year’s performance-based funding activities
- Continue to encourage feedback on best practices in performance-based funding

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19
II. Fiscal

41. For institutions to fully adopt and integrate PBF, there must be a clear and discernible link between constituent performance on key indicators and internal resource allocations.

- **Short-term PBF-related fiscal recommendations (October 2016 – July 2017)**
  - Organize presentations from 1-2 other universities and an international expert related to best practices for internal resource allocation mechanisms.
  - Prepare detailed review of the strengths, weaknesses, and opportunities to enhance the alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by the MSES.

- **Mid-term PBF-related fiscal recommendations (August 2017 – July 2018)**
  - Clearly and unambiguously report institutional results to MSES on the University’s performance for each of its indicators in early June 2018.
  - Review and assess the financial implications of the University’s performance as it relates to the terms of the performance agreement. (MSES should make awards no later than the end of July 2018) and provide written feedback to the MSES.
  - Review and assess the University’s alignment between PBF awards and internal resource allocation decisions. This review should be endorsed by university leadership bodies (e.g. the senate, rectorate, council).

- **Long-term PBF-related fiscal recommendations (August 2018 and after)**
  - Support the work of the MSES in assessing the financial management capacity-building needs of the University; ensure that appropriate parties participate in activities as offered by the MSES.

42. The following infographic summarizes the fiscal recommendations for the University of Zagreb.
UNIVERSITY OF ZAGREB
FISCAL RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD
LEADERSHIP/PLANNING

FISCAL
€ kn

DATA SYSTEMS

TIMELINE

Short-term Recommendations
(October 2016-July 2017)
Share best practices on internal resource allocation mechanisms by organizing presentations from 1-2 other universities and an international expert

Prepare detailed review of strengths, weaknesses, and opportunities to enhance alignment of internal resource allocation with the University’s strategic plan and the expanded use of performance contracts by MSES

Medium-term Recommendations
(August 2017-July 2018)
Report results to MSES on University’s performance for each indicator (in June 2018)
Review and assess MSES financial awarding of University’s performance and provide written feedback to MSES

Long-term Recommendations
(August 2018-onwards)
Support work of MSES in assessing financial management capacity-building needs of the University

Review and assess University’s alignment between performance-based funding awards and internal resource allocation decisions
III. Data

43. Data collection, reporting, and analysis require systematic improvement for a credible and reliable national PBF. Each institution has a role to play in strengthening its data resources and systems along with the MSES.

- Short-term PBF-related data recommendations (October 2016 – July 2017)
  
  - Prepare a list of 4-6 institution-specific key performance indicators, which have transparent and clear measures for review and negotiation with the MSES.
  
  - Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis.\(^{34}\)
  
  - Conduct a needs assessment to determine key institutional data needed to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates).
  
  - Compare data definitions across faculties and departments to ensure University-wide and MSES consistency.\(^{35}\)

- Mid-term and long-term data recommendations (August 2017 and beyond)
  
  - Prepare an implementation plan to develop common data warehouses throughout the University.
  
  - Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations.

44. The following infographic summarizes the data recommendations for the University of Zagreb.

\(^{34}\) As participants in the U-Multirank, the University of Zagreb already has the data and instrument to support this measurement and analysis of performance.

\(^{35}\) Likewise, should already be possible via the U-Multirank instrument.
UNIVERSITY OF ZAGREB
DATA RECOMMENDATIONS

PERFORMANCE AGREEMENT SCORECARD

LEADERSHIP/PLANNING

FISCAL

€ kn

DATASYSTEMS

TIMELINE

Short-term Recommendations (October 2016-July 2017)

Prepare list of 4-6 institution-specific key performance indicators - which have transparent and clear measures - for review and negotiation with MSES

Organize presentations from 1-2 other universities and an international expert to share best practices on institutional data gathering, reporting, and analysis

Conduct a needs assessment to determine key institutional data to be managed at the department, faculty, and central administration level (e.g. tracking of low-income students, “tracer” studies of graduates)

Compare data definitions across faculties and departments to ensure University-wide and MSES consistency


Prepare an implementation plan to develop common data warehouses throughout the University

Submit a briefing endorsed by University leadership (e.g. the senate, rectorate, council) on the key findings and recommendations
Annex 1. Project Timeline and Activities
Annex 2. Institutional Self-Assessment

Institutional Self-Assessment

Instructions: This self-assessment contains multiple choice questions, questions which require an attachment, and open-ended questions. Please provide a response for all questions. Open-ended questions require a typed response in a text box.

The text box will expand to fit your response. Please limit your written responses to 1,000 words per response.

Please save your responses before closing the document.

If there are any questions while completing the self-assessment please contact:
Roberta Bassett, Senior Education Specialist: rbassett@worldbank.org
Jason Weaver, Senior Education Specialist: jweaver2@worldbank.org

Please send the completed self-assessment and any additional supporting documents to rbassett@worldbank.org by November 6, 2015.

Management Readiness

1. A. Is there a university-wide strategic plan which has been approved by the faculty senate and will be in effect for at least the next three years?

Choose an item.

If YES, please provide a copy of the strategic plan and highlight the language that aligns with the five objectives identified as priorities by the Ministry of Science, Education and Sports. These five objectives are:

a. Increase low-income students
b. Increase STEM students
c. Increase first-year to second-year completion rates
d. Provide more grants to students
e. Increase effective management

B. For non-integrated universities only: Please provide a copy of existing strategic plans for autonomous faculties and highlight the language that aligns with the five objectives identified as priorities by the MSES.
2. Does the University have a system which financially rewards or sanctions faculties/departments based on their performance of meeting the goals in the strategic plan?

Choose an item.

If YES, please explain the University’s guidelines.

Click here to enter text.

3. Provide an outline of a communications and participation plan to educate and engage the university community on the performance agreement.

Click here to enter text.

4. Has the University’s current management team enacted any changes within the past year to increase efficiencies or improve performance?

Choose an item.

If YES, please describe these changes, as well as the current and anticipated amount of cost-savings derived from these changes.
5. **Briefly describe the level of governance and financial integration at your University and what impact this may have on the negotiation and implementation of future performance agreements. Include how any potential challenges from the University's organizational structure will be mitigated.**

Click here to enter text.

6. **How many years has the rector served in his or her current position?**

Choose an item.

---

**Fiscal Readiness**

7. **A. Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for the entire University in the past year.**

Click here to enter text.
B. For non-integrated universities only: Provide the percent breakdown of revenue sources (state funding, student fees, gifts, contracts, auxiliaries such as sales from bookstores or rent from dorms, etc.) for autonomous faculties/departments in the past year.

Click here to enter text.

8. Does the University have a plan on how it may absorb potential declines in state funding over the next one to three years?

Choose an item.
If YES, describe the University’s plan on how the institution may absorb potential declines in state funding.

Click here to enter text.

9. Does the University have guidelines on how the central administration will allocate state funding to incentivize performance across all faculties and departments in alignment with the objectives outlined by the MSES?

Choose an item.
If YES, describe the University’s strategy on how the central administration will allocate state funding to incentivize performance.

Click here to enter text.
Data Readiness

10. Provide a brief description of the data collected by the University in the following areas:

j. Student demographics (e.g. gender, date of birth)
k. Student enrollment/retention (e.g. program of study, credits attempted)
l. Student financial status (e.g. full-time/part-time, family income)

Click here to enter text.

11. Explain the process by which data is collected, updated, and checked to audit validity.

Click here to enter text.

12. Does the University collect data for any of the areas identified by MSES as priorities?

Choose an item.
If YES, please provide the definition of the data collected by the universities as it relates to:

p. Low-income students
q. Student enrollment in STEM fields
r. Student retention rates (first-year to second year)
s. Students who receive grants
t. Effective university management
If NO, please explain the University’s plans to acquire the key data sources/systems to collect this data including a list of action items, completion dates, and budget.

13. Are indicators collected to monitor the implementation of strategies and achievement of goals in the University’s strategic plan?

Choose an item.
If YES, please provide three examples.

14. If the University could choose two specific performance indicators particular to its mission to be a part of the next performance agreement, please describe specifically what they would be; how they would be measured; and the annual targets.
15. Please explain what assistance the University may require, if any, to successfully implement the next round of performance agreements. If the response includes additional funding or staff, please specifically indicate how the funding or staff will be utilized.

16. Taking into account the state budget currently allocated to the University, how much do you estimate is still lacking as the minimum requirement necessary for running the University?

17. Provide a list of the University costs which are not sufficiently covered by the state budget currently allocated.
18. Do you consider the revenues derived from student tuition fees to be sufficient for the University budget? Or should this part of the budget be reconsidered with the objective to increase access to the University?

Click here to enter text.

19. A. What costs do you currently cover with the revenue derived from student tuition fees?

Click here to enter text.

B. If the costs of running the University were covered entirely by the state budget, what would be the primary purpose of the revenue derived from student tuition fees?

Click here to enter text.
20. What is your estimation of the full cost of study for each student per year and per field?

Click here to enter text.
Annex 3. Highlights of Best Practices and Lessons Learned
International Experience

Chile

1. To complement the existing norms of formula funding and competitive grants, in 2007, Chile introduced Performance-Based Agreements (PBAs) on a pilot basis to enhance the performance of higher education institutions. The goal and specific objectives of the PBAs are as follows:

   - **Goal:**
     - To align institutional missions with national and regional priorities, university autonomy with public accountability, and institutional performance with public funding.

   - **Specific objectives:**
     - To develop and strengthen the capacities and competencies at universities for outcome-based management in priority fields for Chile;
     - To improve the quality of the educational provision; and
     - To assure periodic, transparent and public measurement of outcomes;

2. The Government of Chile expanded the PBAs more broadly across the system, having seen various benefits. These benefits include the improvement of student retention rate and the increase in scientific and technological production. Minimum criteria to participate in PBA and factors for successful implementation at the government level and institutional level in Chile are included below.

   - **Minimum Criteria to Participate in PBA:**
     - Well-developed and officially approved Strategic Development Plan, including clear mission and vision, educational model, and a basic information management system
     - A satisfactory initial level of institutional development
     - Ensure full alignment of projects with the government’s higher education policies
     - Institutionalization of the PBA team for sustainability once external funding is completed

• Success Factors
  
  i. Government Level
  
  • Appropriate selection of HEI, focusing on institutions which possess levels of development ensuring solvency and a capacity to undertake new strategic challenges;
  
  • Wide dissemination of the new PBA instrument;
  
  • Renewal of governmental bodies: Just as universities must make changes to improve their performance, government bodies and other national and international entities involved must also make changes in line with institutions to streamline processes;
  
  ii. Institutional level
  
  • Selection of central themes to institutional development and the fulfilment of its mission and goals;
  
  • Involvement of academic and administrative units at an early stage;
  
  • A team of highly professional negotiators;
  
  • A committed and motivated management team which can build a feasible vision and integrate many people around common objectives, overcoming any possible differences and prejudices;

Hong Kong

3. In Hong Kong, there are eight public institutions that are funded by the University Grants Commission (UGC). This Commission is responsible for advising the government on the developmental and funding needs of higher education institutions. Since each institution has a significant degree of freedom to create its own profile, there is a tendency that many want to be research intensive, leading to a lack of diversification in the system.37

4. To encourage role differentiation, the UGC introduced a Performance and Role-Related Funding Scheme (PRFS) for the 2005-2008 (triennium). Hence, the objective of the PRFS was to provide assurance that the institutions are adhering to their roles and that they perform well in those roles by linking funding allocation and performance against the expected role. Ten percent of recurrent public funds was set aside for this peer-review driven system of performance evaluation. HEIs could earn back 10 percent of their block grant if they adhered to their mission and performed well in their role.

5. There are six common indicators set by the UGC for all HEIs and optional indicators (no more than ten) that each HEI may define. The common indicators are: (i) Strategy; (ii)

37 Sources: Center for Higher Education Policy Studies (CHEPS), 2011, Quality-related Funding, Performance Agreements, and Profiling in Higher Education – An International Comparative Study.
Advanced scholarships; (iii) Teaching, Learning, and Student Achievement; (iv) Community Development; (v) Administration; and (vi) Partnerships.

6. **The following properties are required of the indicators:**

   - Indicators should address both outputs and processes with reference to relevant input measures where appropriate. Indicators should enable an assessment to be made of both the delivered output and efforts to achieve the desired output.
   - Indicators should enable longitudinal comparison to be made over time, such that changes in performance can be assessed in subsequent PRFS exercises
   - Indicators should allow evidence to be presented both qualitatively and quantitatively; and
   - As far as possible, each type of indicator should be agreed by both the UGC and institutions.

7. **An institution’s performance is evaluated by the UGC’s Assessment Panel based on a written self-assessment of performance against the two types of indicators (common and optional) submitted by each institution.** The Panel assesses (i) the appropriateness of the criteria and benchmarks selected by the institution to measure its own performance in relation to its role; (ii) the sufficiency, quality and relevance of the evidence provided in the submission of performance against criteria; and (iii) the extent to which the submission as a whole is a reflective and evaluative account, and determines the final overall rating. The assessment categories for the first three steps are: Fail, Low, Medium or High. The rating from the first step cannot be improved upon by the ratings from the other two. The overall ratings are Low, Medium, High or Excellent. If a “Fail” judgement is made in the three steps outlined above, no overall PRFS rating is given.

8. **In 2012-2015, the UGC introduced a new funding mechanism based on Academic Development Proposals (ADP).** The ADP focuses more on strategic issues and performance rather than on a high level of detail of individual program offerings as in the PRFS. The PRFS experience was integrated into ADPs into four broad evaluation criteria: (i) Strategy, (ii) Teaching & Learning, (iii) Advanced Scholarship, and (iv) Community. Based on the ADP submitted by HEIs, the UGC then recommends to the Government how it should allocate the student places at different levels and hence allocate recurrent funding among HEIs. However, it should be noted that the adherence to the role of each institution remains a central theme in the assessment.
Costa Rica

9. In 2012, the Costa Rican government commenced a World Bank-funded project to introduce performance agreements called “Institutional Improvement Agreements (AMI)” with four of the five public universities in Costa Rica. The objectives of the project were to:

- help public universities to increase access by investing in infrastructure for teaching, learning and research;
- increase the quality of higher education by upgrading faculty qualifications and fostering evaluation and accreditation;
- increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and
- strengthen public universities’ management capacity and accountability by strengthening a culture of strategic long-term planning and measurement, target setting, accountability, and monitoring and evaluation.

10. Universities develop an Institutional Improvement Plan (PMI) in which each university defines specific targets for four strategic axes. These dimensions are: (i) Access; (ii) Quality; (iii) Innovation and scientific and technological development; and (iv) Institutional management. Through the project, universities receive USD 50 million (€44.57 million) to implement activities to achieve their targets. Each university also contributes USD 5.8-9.5 million (€5.2-8.5 million) counterpart fund.

11. In terms of assessing institutional performance, universities are responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective AMI. Universities then provide a monitoring and evaluation (M&E) report to the Project Coordinating Unit (UCP) twice a year. The UCP reports the M&E information directly to the Liaison Commission, in which both the government and universities are represented. The Liaison Commission establishes a Monitoring and Evaluation Committee that is composed of a team of specialists of recognized authority to provide an external and impartial assessment of Project implementation. The M&E Committee performs three qualitative evaluations of the Project: at the end of Year 1; at mid-term; and at the end of the five-year project implementation period.

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USA

12. In the United States, 26 of 50 states have experimented with PBF to improve institutional effectiveness by linking state funding with institutional performance. The most intense period for this “experiment” spanned 1979 to 2007, and during these initial phases, most PBFs took on the form of formula funding, while performance agreements were relatively limited. PBF gained popularity in the 1990s, when states had sufficient funding, but many states transitioned away from PBF in the early 2000s as revenues declined. Other main reasons for its unpopularity included inflexibility to accommodate institutional differences and campus missions, lack of sustained support from political and campus leaders, and lack of reliable data for performance measurement.

13. The State of Louisiana allocates 15 percent of the operating budget for higher education institutions through a performance agreement system. It is expected that the proportion would go up to 25 percent. Institutions enter into performance agreements with the Louisiana Board of Regents, a state agency that coordinates all public higher education in Louisiana. These agreements establish annual performance targets that are unique to each institution’s mission and based on objectives established in the Granting Resources and Autonomies for Diplomas (GRAD) Act.

14. In exchange for meeting performance targets, institutions can receive permission to raise tuition by up to 10 percent without legislative approval. The performance targets encompass a variety of objectives relating to student performance, articulation and transfer, workforce development, and efficiency and accountability. The indicators include:

- Student success
  - Change in retention
  - Number of degree and certificate completers
  - Increase passage rates on licensure and certification exams
- Articulation and transfer
- Workforce and economic development
  - Employment of degree and certificate earners
  - Research productivity
- Institutional efficiency and accountability


40 National Conference of State Legislatures
15. Based on the lessons learned at an earlier stage, more than 10 US states have re-designed their PBF models and have successfully implemented improved models. It is important to note, however, the effectiveness of PBF in the United States is not conclusive. Researchers and policymakers continue to explore the application of PBF in a number of higher education systems across the country, and whether performance agreements are the appropriate instrument to achieve the desired results.

Regional (European) Experience

16. Many countries in Europe face fiscal challenges and the efficiency and sustainability of funding public higher education is becoming increasingly important. As a cost-effective funding model, PBF has been encouraged at national and European levels. Based on various countries’ experiences in Europe, below are recommendations to policy makers and institutions:

Table A. The relative volume of performance-based funding as part of the government’s budget for higher education by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Performance-based budget in total recurrent funding</th>
<th>Performance Agreement (PA) in place with direct impact on an institution’s budget allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>27% - 32%</td>
<td>Yes</td>
</tr>
<tr>
<td>Austria</td>
<td>Almost 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>England</td>
<td>50%</td>
<td>No</td>
</tr>
<tr>
<td>Finland</td>
<td>75% - 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8% (now) – 10% (future)</td>
<td>Yes</td>
</tr>
<tr>
<td>North-Rhine Westphalia (Germany)</td>
<td>23%</td>
<td>Yes</td>
</tr>
<tr>
<td>Scotland</td>
<td>85%</td>
<td>Yes</td>
</tr>
<tr>
<td>Thuringia (Germany)</td>
<td>55%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Center for Higher Education Policy Studies (CHEPS), 2015, Performance-based funding and performance agreements in fourteen higher education systems.