

INTERNATIONAL RESEARCH ACTIVITIES/PROJECTS OF SLOVENIAN PUBLIC UNIVERSITIES

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Abstract:

Teaching and research in higher education is conducted in collaboration with foreign institutions, professors and researchers. By the end of this decade, the volume of project activities delivered in collaboration with the best foreign institutions and the share of assets acquired in the context of international projects should increase. Therefore, we studied the situation in the field of international research from various sources, such as the Slovenian Statistical Office, which monitors the proportion of foreign funds earmarked for research and development in the higher education sector. Further, we examined how present international research projects are in Slovenian public universities in terms of their number, share, and revenues from abroad. Finally, we described the findings of the survey looking at how embedded university professors and researchers are in international research and in which ways.

Keywords: higher education, international research, Slovenian universities, university professors

1. INTRODUCTION

At the start of the 21st century, higher education underwent extensive transformation, which included structural, cultural, and ideological changes, encapsulated by the terms “globalisation” and “knowledge society”. As a consequence, European (and thereby also Slovenian) higher education systems face many changes and are becoming increasingly internationalized, deregulated, liberalized and market-oriented.

The basic goals of the Slovenian higher education area in 2020 are quality and excellence, diversity and accessibility, with supporting instruments of internationalisation, diversification, study structures and funding of higher education (ReNHEP 2011-2020). Internationalisation of Slovenian higher education is key for its development, as it is a feature of its quality. Slovenian students, professors, other staff, and researchers will learn, train, teach, and conduct research also at foreign institutions.

To this end, Slovenia has committed to developing a National Strategy for the Internationalisation of Slovenian Higher Education. The strategy was supposed to have already been adopted in 2013, however, as things stand, it is likely to be adopted this year i.e. in 2016. The strategy states that the scope of project activities delivered in collaboration with top foreign institutions and the share of funds obtained through international projects will increase (ReNHEP 2011-2020).

In 2010, 12% of research funds in Slovenia were obtained from European projects (RENHEP 2011-2020). The aim is to increase international collaboration in the area of research. To this end, research and higher education organisations will endeavour to achieve the objective of doubling the funds from European projects i.e. doubling the level of research activities carried out in a transnational environment.

This paper, therefore, looks at what proportion of foreign funds is earmarked for research and development in the higher education sector. Further, it examines how many international research projects Slovenian public universities participate in, what proportion of all research projects are international projects, and what level of foreign funds they secure. Finally, it describes the findings of a survey on how embedded university professors and researchers are in international research and in which ways.

2. SLOVENIAN HIGHER EDUCATION MASTER PLAN 2011- 2020¹

Here we present the objectives and measures outlined in the Resolution on National Higher Education Programme 2011-2020 that relate to the internationalisation of Slovenian higher education.

2.1. Objectives

By 2020, Slovenian higher education will be an integral part of the global higher education space, constantly improving its quality, in cooperation and competition with top foreign institutions:

- Its quality will be in line with European quality standards and internationally comparable, and its achievements competitive at international level.
- In its openness to the international area, it will be a part of the European higher education area, and linked with neighbouring regions and the most developed countries worldwide.
- Teaching and research in higher education will take place in cooperation with foreign institutions, higher education teachers and researchers, and in the presence of foreign students.
- The number of joint study programmes established with foreign higher education institutions will significantly increase.
- Slovenian students, higher education teachers, other staff, and researchers will learn, train, teach, and conduct research also at foreign institutions.
- The recognition of education acquired abroad will be flexible and open.
- Foreign students and professionals will consider Slovenia an attractive destination for higher education study and for teaching, research, and professional work.

¹ Taken and adjusted from ReNHEP 2011-2020.

- By the end of the decade, each Slovenian higher education institution will develop a set of study programmes that will be offered to foreign students in foreign languages, with a priority on postgraduate study programmes.
- Slovenian universities will carry out some study programmes for mixed groups of students from different countries.
- The proportion of foreign nationals amongst students, higher education teachers, staff, and researchers will increase considerably by 2020, so that, along with international activities, it will ensure Slovenian higher education institutions have an international character.
- Slovenia will become a best practice example in the area of regional mobility (the Western Balkans).
- Development of a special scholarship fund for the promotion of inbound mobility of students, higher education teachers, and researchers from priority regions and countries, which will be defined in the National Strategy for the Internationalisation of Slovenian Higher Education.

2.2. Measures of objectives' realisation

The following measures will be used to monitor the realisation of objectives in the area of internationalisation:

- In 2020, 20% of Slovenian graduates will be mobile (short-time mobility).
- By 2020, the proportion of foreign students studying at Slovenian higher education institutions for the entire period of their studies will be at least 10%.
- By 2020, at least one fifth of doctoral students will be enrolled in programmes that are help jointly with foreign universities.
- By 2020, there will be at least 10% of foreign citizens amongst teachers, staff, and researchers.
- By the end of the decade, the scope of project activities delivered in cooperation with top foreign institutions and the share of funds obtained through international projects will increase.

As we can see from the Slovenian higher education master plan 2011-2020, there is only one objective that places emphasis on international research, i.e. that research in higher education will take place in collaboration with foreign institutions; and only one criteria to measure the achievement of this objective, i.e. that by 2020, the scope of project activities delivered in collaboration with top foreign institutions and the share of funds obtained through international projects will increase. However, the explanatory note on the measure to achieve this objective states that research organisations shall endeavour to achieve the objective of doubling the funds from European projects i.e. doubling the level of research activities carried out in a transnational environment.

Unfortunately, neither the objective nor the measure is quantified and therefore at the end of the decade we will only be able to determine whether we have increased the scope of international collaboration on research projects in terms of the number of projects, volume, and share of resources allocated to research. Although the explanatory note of the measure is quantified, it is not clear which institutions are included in the term "research organisations" i.e. whether this measure refers only to research institutes or higher education institutions as well.

3. CURRENT SITUATION

3.1. Slovenian higher education system

On 29th September 2015, the higher education institutions register of accredited higher education institutions (MESS, 2015) included a total of:

- 110 higher education institutions i.e. five universities (with a total of 53 faculties, two colleges, and four academies) and 50 independent higher education institutions (one academy, 23 faculties, and 26 colleges), and
- 880 study programmes (44.1% undergraduate (1st cycle), 47.5% master's (2nd cycle), and 11.4% doctoral study programmes and without training programmes), of which 81.9% are offered by public higher education institutions.

In the 2014/15 academic year, there were 72,214 students in higher education on 31 December 2014 (SORS, 2016, 1), which is 25,914 students fewer than in the 2008/09 academic year.

In the 2014/15 academic year, 84.5% of higher education students were full-time students (72.6% in 2008/09), of which 65.8% (40,169) were undergraduate and 33% (20,171) were master's students. Amongst full-time undergraduate students, there were 6,192 (10.1%) students who have completed studies but not yet graduated. The proportion of students who study part time has fallen over the years (from 27.4% in 2008/09 to 15.5% in 2014/15). The structure of part-time students is also changing; the proportion of part-time students is increasing primarily for doctoral programmes (from 5.8% in 2008/09 to 17.3% in 2014/15), and is falling for masters and undergraduate programmes.

In 2014, 88.1% of all tertiary education graduates (18,400) were higher education graduates, compared to 80.1% in 2008, when the total number of tertiary education graduates was 6.8% lower. For undergraduate programmes, the average length of study in 2008 was 6.3 years; 6.8 for university and 5.9 for higher professional studies. In 2014, the average length of study for the 3-year 1st cycle programme was 5.2 years (5.0 for university and 5.3 for higher professional studies), which is less than in 2008, but still almost two times longer than the duration of the study programme (MESS, 2015).

This data demonstrates the multiplicity of higher education studies in Slovenia and the considerable extent to which the actual duration of study exceeds the duration expected according to the study programme.

Furthermore, we shall also examine the numbers of teaching staff in the 2014/15 academic year.

Table 1: Teaching staff at higher education institutions, Slovenia, academic year 2014/15

	Number			Number in FTE*			Number according to teaching load	
	Total	Male	Female	Total	Male	Female	Full or greater than full	Less than full
Professors	5,586	3,388	2,198	3,377.5	2,064.4	1,313.1	2,012	3,551
Assistants	2,894	1,449	1,445	2,021.7	1,126.0	895.7	1,349	1,545
Researchers	156	91	65	87.9	51.7	36.2	47	109
Total	8,636	4,928	3,708	5,487.1	3,242.1	2,245.0	3,408	5,205

*Full-time equivalent.

Source: SORS (2016, 1)

In the 2014/15 academic year, 5,586 professors, associate professors, assistant professors, and lecturers taught at higher education institutions, which is 48 fewer than in 2013/14. They were assisted by 2,894 assistants, skills teachers and other higher education staff, and 156 research staff. The total number of people involved in the teaching process was 8,636, however, their teaching load varied and ranged from full or increased, to partial. Therefore, according to agreed teaching norms, this equates to a total of 5,487 full-time equivalent persons with full teaching load.

In the observed period, one professor was "shared" by 16.8 students on average. If we take into account all teaching staff, each could be assigned 10.3 students on average. This figure is based on converting actual teaching staff numbers to the number of full-time equivalent staff, and converting the actual number of students to the full-time equivalent number of students.

3.2. International research and the Slovenian higher education system

We will demonstrate the current situation in the field of international research in Slovenia through various sources.

Data collected by the Statistical Office of the Republic of Slovenia (SORS) shows that the share of foreign funds for research and development in higher education is increasing considerably, while the share of foreign funds for research and development in the government sector is relatively stable at 12%. The increase in the share of foreign funds in higher education can largely be attributed to a

reduction of 20 million Euros in higher education funds in 2012, an austerity measure taken to manage the budget deficit of 3% of GDP, as defined for all EU members in the Stability and Growth Pact – SGP, a set of rules designed to ensure that countries in the European Union pursue sound public finances and coordinate their fiscal policies (European Commission, 2015).

Table 2: Share of foreign funds for research and development in higher education and government sector in Slovenia, as a proportion of all funding sources in higher education and government sector, for 2011-2013

	2011	2012	2013
Higher education sector	12.2	15.4	19.4
Government sector	11.1	11.8	12.9

Source: SI-STAT, data portal, SORS (2016,2)

As can be seen in Table 2, the share of foreign funds for research and development as a proportion of all funding sources is increasing. However, this increase in the share of foreign funds is largely a result of the aforementioned austerity measures, which reduced the level of funding for higher education.

Table 3: Share of foreign R&D funds in higher education in EU-27 and some other EU countries as a proportion of all funding sources in higher education sector, for 2011-2013

	2011	2012	2013
EU-28	6.8	7.8	N/A
Czech Republic	23.8	37.5	37.0
Germany	4.1	4.8	N/A
Slovenia	12.2	15.4	19.4
Finland	9.7	9.7	10.0

Source: Eurostat, 2015

As can be seen in the Eurostat table above, Slovenia is above the EU-28 average in terms of the share of foreign funds for research and development, although it is important to note that the share of foreign funds can be lower in economically more developed countries, such as Germany and Finland for example, than in Slovenia or Czech Republic.

Below we present data on international research projects of Slovenian public universities, obtained from universities' annual reports.

Table 4: Number and share of international research projects

Institution	2011					
	EU	Non-EU	Total	All proj.	% Total	% EU
UL	400	818	1,218	2,488	48.9	16.0
UM	266	7	273	668	40.9	39.8
UP	31	0	31	225	13.7	13.7
Total	697	818	1,522	3,381	45.0	20.1
	2012					
UL	185	100	285	1,307	21.8	14.1
UM	92	66	158	366	43.1	25.1
UP	56	41	97	284	34.1	19.7
Total	333	207	540	1,957	27.6	17.0
	2013					
UL	187	84	271	1,206	22.4	15.5
UM	72	57	129	317	40.6	22.7
UP	47	0	47	228	20.6	20.6
Total	306	141	447	1,751	25.5	17.5
	2014					
UL	439	123	562	1,400	40.1	31.3
UM	94	56	150	187	80.2	50.2
UP	56	0	56	258	21.7	21.7
Total	509	179	768	1,845	41.6	27.6

Source: Annual Reports of UL (University of Ljubljana), UM (University of Maribor), UP (University of Primorska) for 2011, 2012, 2013, 2014.

Legend:

EU = number of international research projects, funded from the EU budget, such as contractual partnerships in FP7 and other EU projects, including Eureka, ERA-NET, programmes of transnational and cross-border collaboration etc.

Non-EU = number of international research projects, funded from other sources (and not EU)

Total = EU + Non-EU

All proj. = number of all research projects i.e. EU + Non-EU + number of national research projects (basic, applied, CRP, postdoctoral, projects of junior researchers and junior researchers from the industry, and other projects)

% Total = share of international EU and Non-EU projects as a proportion of all research projects

% EU = share of international EU projects as a proportion of all research projects

We can see that after 2011, the number of international and domestic projects at UL fell considerably, and that the situation significantly improved in 2014, especially as a proportion of all projects. The number of international projects at UM from 2011 onwards is fairly stable, but the share of international projects is significantly increasing. At UP, the number of international projects has reduced compared to 2012, but is increasing compared to 2011, and the share has been relatively stable in the past two years. It is also interesting to note that at UM, 50% of international projects are funded by the EU, at UL only 30% are funded by the EU, while at UP all international projects are funded from the EU budget.

For this reason, we also examined to what extent these international projects contribute to universities' revenue.

Table 5: Foreign income (EU budget) for R&D and its share in all income (for R&D and higher education institutions)

Institution	2011				
	II	IR	I	% R	% I
UL	5,511,314	58,457,351	338,551,840	9.4	1.6
UM	3,984,819	15,255,007	94,100,000	26.1	4.2
UP	1,223,237	7,868,357	31,048,293	15.5	3.9
Total	10,719,370	81,580,715	463,700,133	13.1	2.3
	2012				
UL	6,456,095	55,784,683	312,164,882	11.6	2.1
UM	3,571,775	13,395,423	100,208,418	26.7	3.6
UP	1,076,651	6,792,426	24,927,788	15.8	4.3
Total	11,104,521	75,972,532	437,301,088	14.6	2.5
	2013				
UL	6,355,041	50,474,214	320,966,032	12.5	1.9
UM	6,214,661	14,029,190	102,714,054	44.3	6.1
UP	1,889,181	6,600,401	24,976,906	28.6	7.5
Total	14,458,883	71,103,805	448,656,992	20.3	3.2
	2014				
UL	5,991,914	48,401,279	324,689,669	12.3	1.8
UM	5,724,182	15,100,947	81,942,840	37.9	7.0
UP	1,754,406	3,517,620	25,769,167	49.8	6.8
Total	13,470,502	67,019,846	432,401,676	20.1	3.1

Source: Annual Reports of UL (University of Ljubljana), UM (University of Maribor), UP (University of Primorska) for 2011, 2012, 2013, 2014.

Legend:

II = income for international research projects – projects funded from the EU budget (in EUR)

IR = total income for R&D (in EUR)

I = total HEI income (in EUR)

% R = share of income for international research projects as a proportion of total income for R&D

% I = share of income for international EU projects as a proportion of total income for HEI

In recent years, international research projects contribute only just over 12% of the total income from research activities and less than 2% of the total income at UL, while at UM and UP the share is much higher, which is very encouraging. For instance, international research projects constitute almost half of the total income from R&D and approximately 7% of the total income at UP; the shares are similar at UM. Looking at the total contribution of international research projects across all universities, the share of foreign funds for research and development as a proportion of all funds for R&D increased from 13% in 2011 to 20% in 2014, which is encouraging, although the share of foreign funds for research activities as a proportion of the total income is rather small and is only marginally increasing – it increased by less than 1% in the observed period.

It is also interesting to note professors' responses in relation to international research and development activities.

Table 6: International scientific research activities of higher education professors

In the last three years, did you ...	yes (%)
... obtain foreign funds (i.e. from international sources) for research?	32.4
... collaborate with researchers from other countries in projects or other types of research work?	52.7
... collaborate with researchers from countries of former Yugoslavia as part of your international research work?	23.6
... have joint publications with foreign researchers?	48.1
... have joint publications with researchers from countries of former Yugoslavia?	17.6

Source: Klemencic et al. 2015

Respondents' responses suggest that within the research field, our higher education professors are quite active internationally, as approximately half of them are participating (or have participated in recent years) in international projects. They also have joint publications with foreign researchers, of which almost a quarter are with researchers from countries of former Yugoslavia. It would also be good to establish the types of projects, and especially what other forms of research, the respondents participated in.

4. CONCLUSION

This paper examined how internationalised the Slovenian higher education is from the perspective of international projects, sources of funding, and level of international research activity amongst higher education professors. It found that:

- After 2011, the number of international projects fell significantly, although the situation improved in 2014, which can be seen particularly in the share of international projects as a proportion of all projects.
- The share of foreign funds for research and development as a proportion of the total research and development funds has increased from 13% in 2011 to 20% in 2014, while the share of foreign funds as a proportion of the total income increased by less than 1%.
- In recent years, approximately 50% of higher education professors participated in international research projects and other forms of research work and/or published joint publications with foreign researchers.

As a result, we find that, at least in the first half of the decade following the enforcement of the Slovenian higher education master plan 2011-2020, we have not met the objective and particularly the measures of its realisation, i.e. that by 2020 the scope of project activities delivered in collaboration with top foreign institutions and the share of funds obtained through international projects will increase, especially if we consider the explanatory notes, which state that research organisations shall endeavour to achieve the objective of doubling the funds from European projects i.e. doubling the level of research activities carried out in a transnational environment.

It is expected that the development of the National Strategy for the Internationalisation of Slovenian Higher Education, to be adopted this year, i.e. in 2016, will greatly encourage internationalisation of Slovenian higher education in terms of international research, which should be conducive to achieving the objectives and measures in the second half of the decade following the enforcement of the Slovenian higher education master plan 2011-2020.

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