ROMANIA
Advisory Services Agreement on

Technical Assistance to Enhance Quality Assurance in Higher Education System in Romania (P157508)

Output 2.1

Draft Recommendation for the Methodology for the Classification of Higher Education Institutions

April 2018

THE WORLD BANK
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Competence makes a difference! Project selected under the Administrative Capacity Operational Program, co-financed by European Union from the European Social Fund

This report was delivered under the Advisory Services Agreement on Technical Assistance to Enhance Quality Assurance in Higher Education System in Romania signed between the Romanian Agency for Quality Assurance in Higher Education and the International Bank for Reconstruction and Development on July 24, 2017. The present document corresponds to Output No. 2.1 under the above-mentioned agreement.

Proposed Methodology and Indicators for Classification of Universities in Romania

Second Draft
(Incorporates Ranking of Study Programs)

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Abbreviations and Acronyms

ANOSR	National Alliance of Student Organizations in Romania
ARACIS/RAQAHE	Romanian Agency for Quality Assurance in Higher Education
CENSIS	Center for Social Investment Studies
CHE	Center for Higher Education
CNFIS	National Council for the Financing of Higher Education
CoR	Council of Rectors
HEI(s)	Higher Education Institution(s)
ICT	Information and Communications Technology
MoNE	Ministry of National Education
NIS	National Institute of Statistics
WB	World Bank

Introduction

1. This document is a second iteration of the draft methodology for the development of a classification of universities in Romania that incorporates suggestions for the development of a ranking of study programs. It is an output of a World Bank advisory project to improve the capacity of the Ministry of National Education (MoNE) and the Romanian Agency for Quality Assurance in Higher Education (RAQAHE/ARACIS) to govern the quality assurance system of higher education in Romania. This second draft includes feedback given by a variety of stakeholders who commented online and in personal meetings on the first draft methodology for the classification of universities submitted in December 2017 and on an analytical paper on rankings submitted in January 2018.

2. The classification methodology and the suggestions for the development of a methodology for the ranking of study programs are presented here as integral parts of an "Information Tool" that contains also the categorization of universities required by the Romanian Law of Education 1 from 2011[1]**.** The Information Tool proposed consists of three components:

- a *Categorization* of universities, which covers the law requirement to classify universities,
- a *Profile* of universities, which complements the law requirement to classify universities, and
- a *Ranking* of study programmes, as required by the law but defined in terms of fields of study, in accordance to the current legislation that regulates the organisation of universities.[2]

3. The *Categorization* component is focused on grouping universities in categories A, B, and C as stipulated in the National Law of Education. According to this Law class A is for universities mainly for education; B, for universities for education and scientific research and artistic creation; and C, for universities of advanced research and education.[3] The proposal put forward in this document to allocate universities to the categories A, B, and C seeks to highlight that these three categories refer to a classification of universities that groups them according to the different focus they place on teaching and research and that this does not necessarily reflect differences in terms of their quality. As such, the proposal is to define the allocation of universities to these categories on the basis mainly of activity and demographic indicators rather than on performance indicators. In this way the categorization of universities aligns with what is considered in international practice in the sector as

[1] National Law of Education 1/2011, art 193, para 4.
[2] GD currently in place is no. 140/2017. http://www.cnfis.ro/legislatie/documente-constitutive/legislatie/
[3] National Law of Education 1/2011, art 193, para 4

"classification"[4] and with the Bologna Process' views on the functionality of transparency tools to enable understanding of the diversity of higher education provision.[5]

4. In addition, the *Categorization* component reflects the Romanian counterparts' request to consider the types of universities that are allocated to the categories A, B, and C. It has been agreed that the types of universities will be defined in terms of the fundamental fields in which they are specialised, according to current legislation[6] and to students' enrolments numbers. Hence, this document proposes a strategy for allocating universities to these categories that allows to comply with the law requirement to allocate only one category per university but at the same time offers an option in which it is possible to retain the information about the universities' areas of specialisation.

5. The *Profile* component complements the classification of universities comprised in the *Categorization* component. While the *Categorization* follows the law in that it classifies universities according to their focus on research and/or teaching, the *Profile* component offers additional indicators to consider when observing the different types of universities that constitute the higher education sector in Romania. For instance, it includes indicators related to the size of the institutions, breadth of programmatic offer, connection with the region, and students' population profiles. As it focuses on highlighting the horizontal diversity of the system, the *Profile* component builds on indicators that look at the activities and demographics of the institutions.

6. The *Ranking* component seeks to show how the study programs that universities offer are performing along a variety of dimensions. Therefore, the ranking is to be based on performance indicators that assess the quality of the offer. These dimensions, however, will not be limited to research, as it is the case for the *Categorization* component according to the Law's definition of categories A, B, and C, and will include both metrics and qualitative evaluations.

7. This proposal recommends that the *Profile* and *Ranking* components are kept as two separate legs of the methodology. This is because of the different types of information they require and can provide. As the *Profiles* of universities offers a picture of the horizontal diversity of the higher education system and the *Rankings* report the performance and quality of study programs, the construction of these two sides of the Information Tool requires different types of indicators. As a result, in the case of *Profile* indicators the focus is on

[4] See for instance Carnegie Classification or U-Map classification described later in this document as well as analyses and academic-led classification exercises such as Daraio et al. (2011) The European university landscape: A micro characterization based on evidence from the Aquameth project, Research Policy 40 (2011) 148–164; Niederl, A. et.al. (2014) Mapping the European higher education landscape: new insights from the EUMIDA project in Bonaccorsi, A. ed. Knowledge, diversity and performance in Europan Higher Education, Cheltenham and Massachussets: Edward Elgar; De la Torre et.al. (2015) ¿Existen diferentes tipologías de universidades en España? Una primera aproximación in Investigaciones de Economía de la Educación, 10: 231-251; Coates, H. et. al. (2013) Profiling diversity of Australian universities, Research Briefing, ACER and LHMartin Institute or Tertiary Education Leadership and Management (June); Ziegele, F. (2013) Classification of Higher Education Institutions: The European Case in Pensamiento Educativo. Revista de Investigación Educacional Latinoamericana 2013, 50(1), 76-95; Brunner, J. J. (2015) On the Classification of Universities in Pensamiento Educativo. Revista de Investigación Educacional Latinoamericana 2013, 50(1), 115-129; van Vught, F. (2009) "Diversity and differentiation in higher education" in F. van Vught (Ed.) Mapping the higher education landscape. Towards a European classification of higher education (1–16). Dordrecht: Springer.

[5] Vercruysse, N and V. Proteasa (2012) Transparency Tools across the European Higher Education Area. Report of the Bologna Process Working Group on Transparency Tools, 2009-2012.

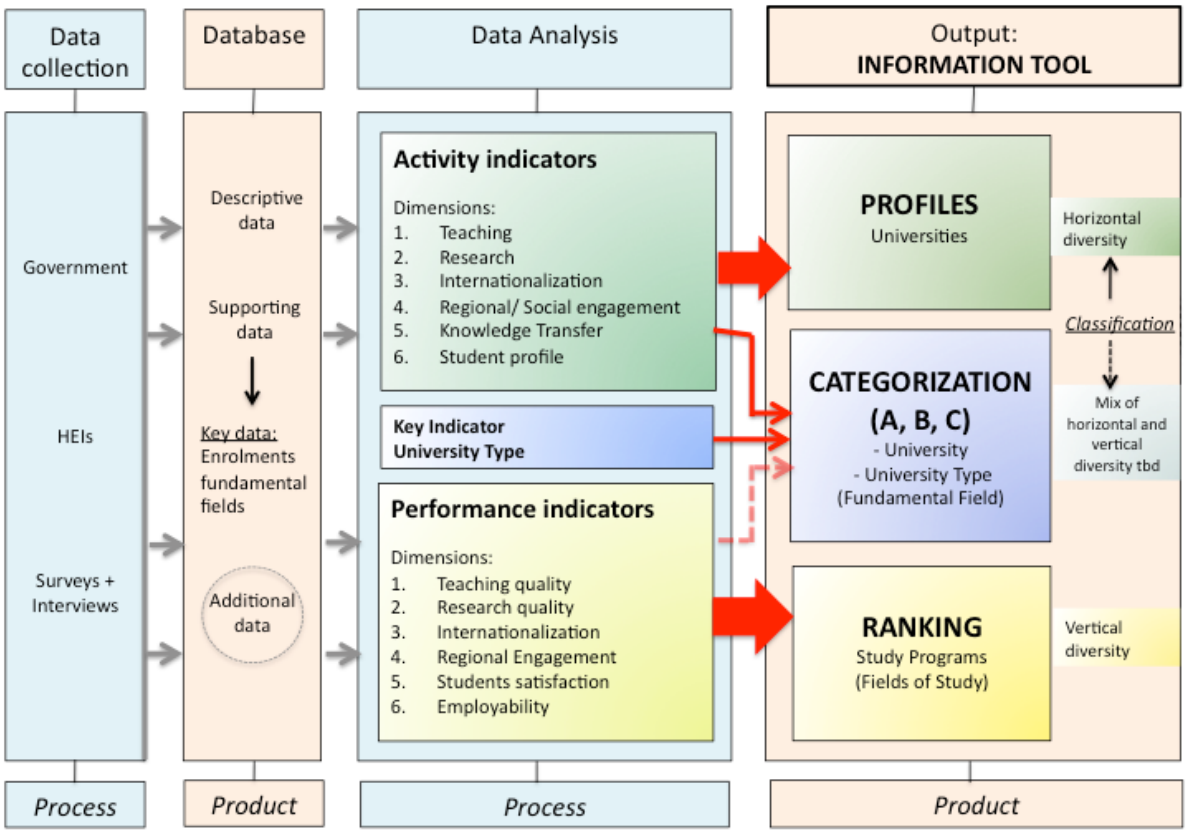
[6] GD currently in place is no. 140/2017. http://www.cnfis.ro/legislatie/documente-constitutive/legislatie/

volumes and demographics, and in the case of *Rankings* the focus is on quality and achievements. For the former, the indicators will be organised around six dimensions – teaching, research, internationalisation, regional and social engagement, knowledge transfer, and student profile. For the latter, the dimensions suggested are teaching quality, research quality, students' satisfaction, employability, and quality aspects of internationalisation and regional engagement.

8. However, the three components of the Information Tool proposed here are connected to each other at three levels. First, the data on which their indicators are based may be the same and come from the same database. For instance, student enrolment numbers will be used to elaborate both activity and performance indicators. Second, there may be overlaps in the indicators that will be used for the construction of each of these components, especially in the case of the *Categorization* component which will be constructed from the combination of indicators drawing, to a degree to be determined, on the other two components. Third, the information offered in each of these components could be combined with the others' components information in different searches that the users may make when accessing the Information Tool. For instance, an employer may be interested in universities that have strong links with the region (*Profile*) and then could consult in which study programmes those selected universities perform better (*Ranking*) for recruitment purposes. Similarly, a prospective student may be interested in a university that performs well in a given study field (*Ranking*) and then would like to select a university that prioritises teaching (*Categorization*).

9. The production of the Information Tool proposed here will require a set of processes and a supporting database. In a first stage the Information Tool will require the gathering and collection of data, which in some cases is already collected by government agencies and in others will have to be gathered ad hoc for the purposes of the construction of this Information Tool. The second stage is the development of a database to centralise the data gathered and collected. The third stage consists of the analysis of the data collected along the lines of the types of indicators proposed for this tool – activity and performance indicators. As explained above, some of these indicators will make use of the same data. Finally, the results of these analyses will be presented in the form of a *Ranking* of study programmes, a *Profile* of institutions and the *Categorization* of the latter in the A, B, and C categories set out in the law as explained above. At this level of output the users will be allowed to do different searches that can combine indicators of the three components of the information tool. Figure 1 below visualises these processes and products and, after offering more details about these processes and products, a final section of this document will illustrate different ways in which the Information Tool could be used.

Figure 1. Information Tool - Processes and Products



10. The methodology and indicators proposed in this document are to be open to consultation with the key stakeholders of the higher education system of Romania. These stakeholders comprise universities themselves, students, policy makers, researchers, and employers. All of them are at the same time potential users of this Information Tool. Following on comments and feedback obtained in that consultation phase the methodology and indicators will be refined, possibly tested in a pilot and, after new redefinitions and adjustments according to the results of the pilots, a final methodology and set of indicators will be proposed for the development and implementation of a classification of universities, including their categorization, and further suggestions will be offered in relation to the development of a ranking of study programs in Romania.

11. This document contains six sections in addition to this introduction and two annexes. The first section explicates the approach to classifications and ranking underpinning the Information Tool proposed here. The second section looks at the data collection process. The third section focuses on the *Categorization* component of the Information Tool and offers a methodology for allocating universities to the categories A, B, and C as they are defined in the aforementioned law. The fourth section concerns the *Profiles* and *Ranking* components of the Information Tool, providing suggestions for indicators, discussions for reasons to choose them including some alternatives. The fifth section proposes different forms in which the Information Tool could be used by various types of users and a final section sets out the steps forward, including a proposal for the organisation of the public consultation with stakeholders. The annexes offer more details on the indicators suggested for the *Profile* component and the algorithms for selected indicators.

The Approach to Classifications and Rankings Underpinning the Information Tool

12. To date, the approaches used most often to classify universities categorize them in relation to legally-based and traditional definitions. The cases of Germany and France, with their systems of "Universitäten" and "Fachhochschulen" (universities of applied sciences), and "universités" and "grandes écoles", respectively, are among the most well-known and clearly established ones in Europe. Many other cases in the region organise their higher education system along similar lines, including for instance Denmark and Belgium. These classifications thus are based on legal missions or disciplinary focus and usually organise higher education institutions in terms of technical universities, academies, polytechnics, etc. Whether a university belongs or not to each of these categories is defined by the legal status set up in the institutions' statutes.[7] In some countries these categories are not established in legislation but draw their legitimacy on the bases of theoretical or traditional acceptance and use, as in the case of Chile for instance.[8]

Box 1: Classification of higher education institutions in Denmark

Business academies:
Offer professionally oriented short cycle and first cycle degree programs.

University Colleges:
Offer professionally oriented first cycle degree programs.

Maritime Education and Training Institutions:
Offer professionally oriented short cycle and first cycle degree programs.

General and specialised research universities:
Offer first, second and third cycle degree programs in academic disciplines.

University level institutions:
Offer first, second and third cycle degree programs in subject fields such as architecture, design, music, and fine and performing arts.

Source: https://ufm.dk/en/education/recognition-and-transparency/transparency-tools/europass/diploma-supplement/standardbeskrivelse-danish-higher-education-system.pdf

13. As a result of a double process of heterogenization – due to the expansion of the system mainly – and homogenization – due in part to the influence of rankings – of the higher education landscape globally, several efforts have been developed to attempt to obtain a clearer picture of this new and changing scenario. In line with these developments, the key objective of the approach to classifications adopted herein for Romania is to offer a picture of the higher education system of the country that highlights the diversity of its institutions beyond legally, theoretically or traditional definitions. For this purpose, the classification should emerge from data gathering and analysis along a multiple number of dimensions. The picture will not be simply a static snapshot of the institutions but will also allow for more dynamic comparisons and for the identification of changes over time as the classification is throughout a number of years.[9]

[7] Ziegele, F. (2013) "Classification of Higher Education Institutions: The European Case", *ibid:* 77.
[8] Brunner, J. J. (2015) "On the Classification of Universities", *ibid.*
[9] Ziegele (2013) "Classification of Higher Education Institutions: The European Case", *ibid*

14. There are well-known data-driven cases of classification of universities that highlight their diversity on the bases of a multi-dimensional approach. Those most well-known are U-Map, developed with the support of European Union funds, and the long-established Carnegie Classification[10], in place in the United States since the late 1960s (see Box 2). A number of rankings currently also adopt a multi-dimensional approach and are user-driven. These include the U-Multiranking, also supported by the European Union, the CHE Ranking[11], in place in Germany, Austria and Switzerland and which was closely replicated in the Netherlands' "StudyChoice"[12], and the Bulgarian University Ranking System, BURS[13]. Each of these cases are implemented in different manners, according to different core aims and the varied institutional contexts in which they operate. While Carnegie, for instance, starts from legally-defined first layer of classification of post-secondary education and then offers a more detailed picture of these institutions, the CHE ranking gathers data using questionnaires administered to staff and students as well as it collects administrative data directly from universities.

Box 2: Carnegie Classifications (U.S.A.)

It focuses on post-secondary education institutions (degree-granting colleges and universities) as registered in the U.S. National Center for Education Statistics system.
It consists of six (6) separate but inter-related classifications. Each of them look at different "dimensions" of institutions:

- Basic classification
  According to level of study in which the institutions award most degrees (associate's, bachelor's, master's, doctoral)
- Undergraduate instructional program classification
  On fields of study focus and mix in degrees conferred
- Graduate instructional program classification
  On fields of study and type of graduate degrees conferred
- Enrolment profile classification
  According to level of study in which students are most predominantly enrolled
- Undergraduate profile classification
  On enrolment status (modality), selectivity, and transfers
- Size and setting classification
  On duration of study courses, enrolment size, residential situation of undergraduates

Source: http://carnegieclassifications.iu.edu/

15. In the cases of multi-dimensional rankings, however, putting the ranking perspective at the core dilutes the possibility of highlighting and valuing diversity of the respective higher education systems. This is why the proposal presented here seeks to offer the possibility of clearly distinguishing the component of this Information Tool that ranks university's study programmes from the components that offer the possibility of highlighting a variety of aspects that characterise universities and which do not straightforwardly represent a value judgement. For instance, being regionally engaged as opposed to internationally oriented does not per se indicate a better or worse university; similarly, having a high proportion of mature students is no indication either of a better or worse quality institution. The value given to these kinds of characteristics will depend on the needs of those using the Information Tool – a local business may use the tool to seek partnerships with universities highly involved with the region; a mature student may prefer an institutional environment where staff could be more familiar with the expectations and needs of these kinds of students.

[10] http://carnegieclassifications.iu.edu/index.php
[11] https://ranking.zeit.de/che/en/
[12] https://www.studiekeuze123.nl/
[13] http://rsvu.mon.bg/rsvu3/?locale=en#DocsPlace:

Box 3: U-Map and U-Multirank compared

Both were developed by European universities and key stakeholders

In both HEI participation is voluntary and direct (not mediated by governments)

Both are multidimensional, web-based and user-driven

Both cover indicators along the dimensions of research, teaching & learning, knowledge Exchange, internationalisation, and Regional Engagement

U-Map includes the dimension of student profile also

U-Map shows **what** a HEI is doing and how that compares to other institutions worldwide

U-Map produces 'sunburst charts' that provide a snapshot of the extent to which a HEI is engaged in the various dimensions of institutional activity

U-Multirank visualises **how well** HEIs are performing in the context of their institutional profile. Hence it is closely connected to U-Map, as it adds the performance aspect to the mapping.

U-Multirank allows for the comparisons of comparable institutions and also of the disciplinary fields in which they are active.

Source: Jongbloed et.al. (2013) U-Map and U-Multirank: profiling and ranking tools for higher education institutions. Paper presented in track 5 at the EAIR 35 Annual Forum in Rotterdam, the Netherlands.

16. Adopting a data-driven approach that seeks to highlight horizontal diversity means going beyond the use of ranking formats to present the distinctive characteristics of universities. The type of diversity that this multi-dimensional and user-oriented approach to classifications favours does not seek to rank them in a vertical hierarchical order, like rankings do, but to horizontally differentiate them by key functional and demographic differences.[14] The approach to classifications adopted here highlights its purpose as a transparency tool that can be of use to inform and support a variety of stakeholders.[15] HEI authorities, for instance, could use the classification to identify gaps in their provision and visualise disconnects between their missions and actions. Used in relation to the information provided in the *Ranking* component, the classification can allow institutions to set out specific benchmarks in relation to comparable universities or specific areas of action. Hence, while with the *Ranking* component of this Information Tool users will be able to access information regarding the performance of each university in the different fields of study in which they are operational, the Information Tool as a whole will offer the possibility to see that information in relation to the distinctive characteristics of the institutions.

17. A data-driven approach also means going beyond simply legally-based forms of classification. On the one hand, a key starting point of the *Categorization* component of the classification is the Education Law's definition of classes of universities in relation to differences in the focus that universities place on education and/or research and/or research. Furthermore, as it has been discussed and agreed upon with the Ministry of Education and ARACIS, this *Categorization* will incorporate the possibility to access the information about universities' categories in relation to their fundamental fields of specialization, which are in

[14] Teichler, U. (2007) Higher Education Systems: Conceptual Frameworks, Comparative Perspectives, Empirical Findings. Rotterdam: Taipe.
[15] Vercruysse, N and V. Proteasa (2012) Transparency Tools across the European Higher Education Area, *ibid.*

turn defined by legislation every year.[16] On the other hand, since the components of the Information Tool are to be used interconnectedly, the legally-based classification underpinning the *Categorization* component will be complemented by the information provided in the *Profile* component of the Tool which will focus on additional dimensions regarding the actual functioning, approaches and services provided by the universities according to reported and gathered data. Additionally, while the fundamental fields are set out by legislation, it has been agreed with the Romanian counterparts that the correspondence between university and the fundamental fields in which they are active will be determined by data on the proportions of students enrolled in the respective study fields in each university, adding an element of dynamism to the Information Tool.

18. A few implications for the methodological design of this Information Tool derive from the approach to classifications adopted here. Being data-driven, the availability of conventional and verifiable sources is crucial in considerations regarding indicator selection and definition. Then, in particular with regards to the *Profile* component but also to some extent to the *Categorization* one, to stay in line with the emphasis placed on classifying — not ranking — universities, that is, with highlighting the diversity of higher education institutions and not evaluating them, this methodology proposes that these indicators should not be allocated different weights. Each of the indicators proposed for the components of classification side of the Information Tool ought to be considered to have equal weights or importance as demographic descriptors for the institutions.

Box 4: Key characteristics of the approach to classification adopted

- Highlights diversity
- Seeks to horizontally differentiate universities
- Offers a snapshot that allows dynamism
- Data-driven
- Multi-dimensional
- User-oriented
- Seeks to operate as a transparency tool

19. Similarly, while the availability of benchmarks for international comparisons may be welcomed for some indicators, these would be more relevant for the *Ranking* component and when the classification components are used in relation to *Rankings*. Still, it is recommended that the setting of a-priori benchmarks based on international experience is accompanied by benchmarks that reflect the situation of the higher education sector in Romania and in relation to the different types of universities that constitute that sector. The latter benchmarks, hence, can be defined within clusters of universities that would emerge from the users' applying the parameters set out for the classification components of this Information Tool. In other words, the benchmarks for teacher-centred universities (category A) in the field of engineering may be different from those of the same category in the field of social science,

Box 5: Key methodological implications of the approach adopted

1. Data to be conventional and verifiable:
   … because the approach is data-driven.
2. Avoid allocation of weights for indicators of classification components:
   … because the approach highlights diversity without value judgements.
3. Benchmarks relative to clusters of universities defined in classification:
   … because the approach goes beyond vertical differentiation and is user-oriented.

[16] GD currently in place is no. 140/2017. http://www.cnfis.ro/legislatie/documente-constitutive/legislatie/

while in both cases the benchmarks will be set in relation to the performance observed in the country for the universities of those characteristics.

20. Instead of allocating weighs to indicators and setting benchmarks, for the classification part of this Information Tool the methodology recommended is to define intervals and cut-off points. These intervals will be set in accordance to the distribution of the results for all universities to support effective analysis and presentation of the data. Universities would then be allocated to these different intervals according to their own data. These intervals could be labelled, for instance, low, medium, high as is the case of the U-Map and Carnegie Classifications systems (see Boxes 3 and 6).

Box 6: Carnegie's Basic Classification

The basic classification categorizes institutions according to the number of degrees conferred at the levels of doctorate, master's, bachelor's and associate's. For instance, master's Colleges and Universities are those that awarded at least 50 master's degrees and fewer than 20 doctoral degrees during the year in which data for updating the classification is collected.

Within each category the classification creates sub-groups. In the case of Master's colleges and universities these sub-groups are: Larger programs (awarded at least 200 master's degrees); Medium programs (between 100–199) Smaller programs (between (50 and 99).

In the case of Doctoral Universities (classified as such if they granted 20 or more doctoral degrees in year before data collection) the sub-groups are defined in relation to their level of research activity. The latter is calculated from the generation of indexes based on several indicators of research activities including, for instance, research & development expenditures doctoral conferrals in different fields.

Source: http://carnegieclassifications.iu.edu/

21. Suggestions on how to aggregate the data corresponding to the classification-related indicators can be found in the section which addresses the *Categorization* component. Nevertheless, the specific procedures for aggregating data and how the different intervals and cut-off points between them are to be established can be discussed during the phase of consultation of this proposed methodology or, rather, in the implementation and data analysis phases later on. In planning the form in which the Information Tool will be made available to the public, moreover, while this is still to be determined, it should be taken into account that the presentation of the classification results cannot take the form of a league tables but, in line with its objective of highlighting horizontal diversity, it will rather take a network-like format.

22. The methodology proposed for this Information Tool is in line both with current developments in higher education but also with the Romanian higher education legal and policy context. The proposed methodology fulfils the requirement of article 193, paragraph 4 of the National Education Law 1, 2011 and it does so in line with the Romanian National Strategy for Tertiary Education, which establishes, alongside three enabling conditions for the realisation of the vision adopted, the need to "conduct a *data-driven* classification exercise that respects the *diverse* missions of institutions" (emphasis added).[17] Furthermore, the definition of the indicators proposed in this methodology and the considerations regarding their relevance takes into account not only the approach to classifications and rankings

[17] National Strategy for Tertiary Education in Romania 2015-2020, p.12. *op. cit.*

adopted here and several international experiences, but also the various sets of indicators developed by different stakeholders of the higher education system of Romania since the sanctioning of the National Law of Education 1 in 2011. These include the students' proposal[18], the indicators of the methodology approved in 2011[19], and the indicators currently in use by the National Council for Higher Education Financing (CNFIS in its Romanian acronym) for the definition of performance-based funding for public universities.

23. The indicators included in the *Profile* component of the methodology emerged from a rationalisation of the indicators developed at the national level that consisted of a thorough process of dissecting, comparing, subsuming, and, in some cases, redefining these indicators. The focus of this rationalisation process was placed on reducing the number of indicators and aligning them with the approach to classifications adopted for this methodology which stresses that non-value judgements should underpin the definition of the indicators. Then, some new indicators are suggested, drawing on international experience seeking to fill gaps identified in this process of rationalisation and addressing perceived demands from different stakeholders in Romanian HE. The selection and definition of the indicators also considered the availability of data according to what is already reported by HEIs to government agencies as well as what would be desirable that universities reported upon to achieve international comparability. As with the general methodology, the selection and definition of the indicators of this "profile" component also aligns with the Romanian Tertiary Education Strategy 2015-2020, especially with two of its four main action areas: tertiary education attainment, particularly for underrepresented groups, and engagement with the economy.

24. Regarding the *Ranking* component, the term "ranking" in Romania has a dual meaning—one that ties performance to funding and another which seeks to promote transparency and stakeholder access to information. This document proposes to adopt the latter. In Romania, the term is used both in connection with performance-funding systems (in which higher performance/higher rank is associated with larger funding amounts, based on the Education Law of 2011) and in connection with transparency/user-oriented rankings either of the league-table (e.g. the *Times Higher Education World University Rankings)* or non-league table (e.g. *U-Multirank*) variety. Currently, the bulk of the public funding for higher education in Romania is divided into three envelopes. The largest of these, which accounts for roughly 72.5 percent of the total budget, is what is known the "Basic Funding" (FB) envelope. This envelope is distributed on the basis of subject-weighted student enrolments. The "Additional" or "Supplementary" budget (FS), 26.5 percent of the budget, is a performance-based fund. The Supplementary Budget is currently distributed on the basis of fifteen Indicators[20], which will be taken into consideration in the proposals for indicators for this component of the Information Tool.

[18] ANOSR (undated) "University classification: between usefulness and university marketing exercise. Students' perspective", Bucharest: ANOSR.
[19] Order 4072/April 2011 "On the approval of data and information collection for the assessment of universities and study programs for the purpose of university classification and ranking the study programs." The Cabinet of the Minister. Ministry of Education, Research, Youth and Sports, annex 1.
[20] 2017 Budget Documents

25. Yet, the approach that will be prioritized in this methodology for the ranking of study programs is that which adheres to the increasingly predominant international trend in rankings – to design rankings to provide information to the public and to make them multi-dimensional and user-driven (see Box 7). This approach is in line also with the various attempts to develop a "Multi-rank" form of ranking that took place in Romania after the sanctioning of the National Law of Education in 2011, including the approach adopted for the methodology approved in 2011[21] aforementioned and with the views of the Ministry of Education and ARACIS which were shared and discussed in several meetings held in preparation of this document since November 2017.

Box 7: Multi-dimensional rankings

Pioneered by the Centre for Higher Education in Germany and popularized through the European Union-funded *U-Multirank* project.

As with league table rankings, the ranker selects a set of indicators and uses them to compare institutions/programs.

The difference is that the data for each indicator is presented separately.

No attempt is made to weight or aggregate the data across all institutions, and thus there is no "overall" summation of institutions performance: just a series of indicator-by-indicator comparisons.

Multi-dimensional rankings are more often presented in interactive electronic formats which allow users to manipulate data on their own.

The benefit of these rankings is that they present data in a disaggregated manner and put the user in control of the analysis.

26. For transparency-focused and multi-dimensional rankings to exist, there needs to be a minimum of data which provides information relevant to users, and it is along these lines that this document will offer recommendations on the way forward for the government to develop the component *Ranking* of the Information Tool proposed here. In particular, what users may want to know about are: i) study conditions at universities; and ii) benefits of specific programs, in particular labor market outcomes. Current higher education data systems in Romania do not provide this information. Of the fifteen indicators used for performance-based finance, perhaps only one or two — those with respect to hours on practicum placements and student hostel places (see next section) —would make sense for a transparency ranking. Missing still are any kinds of significant examinations of learning conditions (student evaluations of the coherency and quality of the learning environment, such as is contained in the German *CHE* (Center for Higher Education) rankings, the Dutch *Elsevier* rankings, and *U-Multirank*), and examination of outputs such as completion rates or any outcomes such as employment/unemployment/income statistics, such as those contained in the Bulgarian University Ranking System (BURS).

27. This document will provide guidelines along the lines of the aforementioned indicators, and contributions from local experts will complement and complete the design of the *Ranking* component. The next sections include suggestions in terms of indicators that could be used to observe the dimensions that are usually contained in other cases of multi-dimensional rankings. It will do so taking into account priorities regarding specific dimensions that the client suggested was of interest in the Romanian context and known data availability. However, decisions regarding the relevance, specificity per fundamental field of study, viability and weights for aggregating these indicators in composite indexes are to be decided by local experts in view of their own direct knowledge of the corresponding fields.

[21] Order 4072/April 2011 "On the approval of data and information collection for the assessment of universities and study programs for the purpose of university classification and ranking the study programs." The Cabinet of the Minister. Ministry of Education, Research, Youth and Sports, annex 1.

Data Gathering: Strategies and Tools

28. This section offers details about the data collection process alongside some implications of it for the database to be developed, and about the type of data that the database will contain. It also highlights the importance of a key data that will be drawn from that database to define the types of universities that will be allocated to categories A, B, and C.

29. Data for the construction of the indicators that will conform the three components of the Information Tool will come from three main types of sources: governmental sources, institutional sources, and ad hoc surveys and interviews. The first case regards information that is already submitted by universities to different governmental agencies for a variety of purposes. The second case concerns universities themselves, from which data that is still not reported will have to be gathered for the purposes of fulfilling the data needs of the indicators that form the components of this Information Tool. The third type of source will be used for information that is not yet collected by government agencies but which regards views and activities of stakeholders in the higher education sector such as employers, students and academics.

30. As for the first type of sources from where data will be collected, governmental sources, the databases that already collect data that is relevant for the indicators that will form the Information Tool proposed here are: (i) The National Council for Higher Education Financing (CNFIS in its Romanian acronym); (ii) the National platform for collecting statistical data for Higher Education (ANS) which operated at the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI in its Romanian acronym); and (iii) the National reporting system 'budgetary transparency" portal.

31. All of these agencies collect data needed for various of the indicators suggested in this document for the *Profile* and *Ranking* components of the Information Tool. For instance, regarding the indicators proposed for the *Profile* component, CNFIs collects already information about the proportion of graduates coming from socio-economic disadvantaged backgrounds in relation to total number of graduates. The ANS platform at UEFISCDI contains data regarding graduates per study cycle at all cycle levels; data about teacher/student ratio; and on the proportion of international students enrolled per study cycle in relation to total number of students enrolled. The National reporting system collects data that can be useful for indicators regarding levels of expenditure of universities in different in different areas, or income from research grants and projects as a proportion of the total university income.

32. The most efficient way of gathering this information is to connect the relevant government databases together. However, if this is not viable, an alternative could be to request the data and import it to the Information Tool database.

Box 8: Data Sources and Collection Strategies

- Government Agencies:
  Linking databases or requesting imported/exported data
- Universities:
  Direct data input or questionnaires (online, post, telephone, etc)
- Surveys or interviews:
  For perceptions and satisfaction, but these should be based on broader specific studies

33. Regarding the second source for data, universities, there are a number of indicators proposed in this methodology that are not at the moment reported to any governmental agency. For instance, for the dimension of research and in relation to their level of digitalisation one indicator suggested for the *Profile* component of the Information Tool is the access of universities to online databases and journals, a data that is not yet collected at any level. Similarly, no reporting exists at the moment of university expenditures in activities supporting institutional engagement with community, an indicator suggested in this methodology for the dimension of regional engagement within the *Profile* component.

34. In these cases, either universities could fill in data directly in an accessible part of the database that will be designed for this Information Tool. Alternatively, the information could be gathered, together with all the university information that is not yet reported and is needed for this Information Tool, using a questionnaire that could be applied either online, by telephone, by post or in person.

35. The third type of data source will be interviews or surveys. These data gathering tools can be used to collect data on indicators regarding a series of dimensions in which the client expressed particular interest and which are increasingly part of multi-dimensional and user-oriented rankings. This includes information about the reputation of study programmes in different universities among academic staff, which could be used for the *Ranking* component. This, for instance, could combine "research reputation" and "teaching reputation" into an overall score, similar to the Times Higher Education (THE) academic reputation survey. The agencies implementing the operation of this Information Tool could consult a sample of academics to obtain their perspectives on these aspects. Also, students' satisfaction measures could emerge from interviews looking at various aspects of the students' experiences and feed directly into the database and employers' opinions about, for instance, the quality of the skills of recent graduates of different study programmes could be gathered ad hoc to develop this.

36. However, it is recommendable that data on students' satisfaction and graduates relation with the labour market are gathered in specifically developed studies designed for those purposes. This means, for instance, National Students Surveys or Graduate Tracer Studies.[22] Information about teaching quality could also be gathered in specifically designed studies.[23] Then, only key selected inputs of these studies, for instance overall students' satisfaction with teaching or time it takes graduates to obtain paid employment, would be included in the database and the set of indicators that are part of the *Ranking* component.

[22] Examples of graduate tracer studies in place in other countries are the Italian "Alma Laurea" and the "Observatorio Laboral" in place in Colombia. These can be accessed from the following links, respectively: https://www.almalaurea.it/en; http://www.graduadoscolombia.edu.co/html/1732/w3-channel.html.

[23] One of the few examples of these kinds of studies is the Teaching Excellence Framework in the UK. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/658490/Teaching_Excellence_and_Student_Outcomes_Framework_Specification.pdf

37. The database where these data will be contained will allow for the inclusion of qualitative data and results of verification procedures. This means that the database will allow for recording text data, such as those that can be gathered in interviews, and then to codify it and quantify it. At the same time, the database will provide for the registration of reported data and verified data. For the latter, the recommended procedure is to select a random representative sample of indicators in each edition and then also randomly but by clusters/types select a number of universities to audit the data provided, either to the government or directly to this Information Tool's database. The audit (or verification process) could entail, depending on the indicator, online checks, for instance in the case of bibliometrics; access to university documents, for instance to verify effective number of online subscriptions; or site visits, as in the case of indicators regarding facilities.

38. The data that will be gathered from these different sources should ideally be collected at the level of fields of study.[24] This would allow for the disaggregation of data to that level in the case of the *Ranking* component. For both the *Profile* and *Categorization* components, nevertheless, data collected at the level of fields of study could be aggregated to reach the institution level. In the case of the *Profiles* component, if data is not available at the fields of study level, data collected at the institution level would suffice. But in the case of the indicators that will be used for the *Categorization* component data will have to be feasible to be disaggregated down to the level of fundamental fields to take into account university types, as will be explained in the next section.

39. The database will contain three main types of data and indicators – Descriptive Indicators, Supporting Indicators and Additional Indicators. The Descriptive Indicators concern a set of data and indicators that will serve the purposes of the identification of the universities covered in Information Tool. The Supporting Indicators are those that regard directly the data needs of the indicators proposed for the components that make the Information Tool. The Additional Indicators comprise indicators that could be collected for future editions of the rankings component or for more ad hoc studies that could combine those indicators with the information provided in this Tool.

40. Six Descriptive Indicators are proposed. They are: name of the university, registration code, location, size, assumed mission, and legal ownership. The name of the university should be compiled in accordance to the accreditation documents of the institution. The code of the university corresponds to the coding system used by the Romanian National Institute of Statistics. The location should state the name of the city or locality where the institution is registered and could also include references to EuroStat's nomenclature of territorial units for statistics (NUTS2 would be the most pertinent). The size is to be measured in terms of the total number of enrolments. The assumed mission can be recorded for descriptive purposes but also for comparative purposes relating these missions with the actual activities and characteristics of the universities that will emerge from the data collected for each component of this Information Tool. Legal ownership – that is, if the university is private or public – was an additional indicator proposed for consideration in the first draft methodology.

[24] According to the GD140/2017 there are 6 fundamental fields that cover 34 branches of science for both Bachelors and Masters degrees; these branches encompass 86 fields of study (or domains) which in turn contain 368 study programs for BA, and 78 fields of study (or domains) which in turn contain 3,156 study programs for MA.

The indicator has been now incorporated to this set of descriptive indicators following on indications during the first consultation phase that it was relevant to do so.

41. The selected Descriptive Indicators draw on the methodology for the assessment of universities for the purposes of their classification and the ranking of their study programmes developed in 2011.[25] Other indicators included in the 2011 methodology as descriptive indicators have been incorporated to the different components of this proposed methodology. More exploration in the next consultation phase could allow the consideration of other additions to this set of descriptive indicators. For instance, year of foundation could be a relevant indicator in contexts where a long history could be considered as a sign of stability for businesses looking for an academic partner.

Table 1. Suggested set of Descriptive Indicators

Indicator	Definition	Measured how?	Source/Data gathering	NOTE
Name HEI	Official full name	Descriptive	Accreditation/Legal Documents	These can be included as basic information on HEI 'fiches' or 'factsheets', a possible output or form of visualising results available to users.
Code	The unique registration code of the HEI	Descriptive	Coding system used by the Legal Documents	
Location	Name of city or locality where HEI is based	References to NUTS 2, 3 for comparability purposes	Universities/Legal documents	
Size	Total number of enrolments	Absolute size including budget and fee-paying students and part-time, full-time, distance learning (headcount)	ANS/UEFISCDI[26]	
Mission	Mission of the university	Descriptive. As declared in statutes and other foundational documents	Universities' legal documents	
Legal ownership	Whether the university is private or public	Descriptive - binomial	Universities' legal documents	

42. The Supporting Indicators regard the data that concern specifically the indicators that will be used for the *Profile*, *Categorization* and *Ranking* components of the Information Tool. For instance, these data would comprise number of staff broken down by different types of contract, or number of publications, or number of enrolments in all cycles, ideally all gathered at the study fields level. These raw data are the bases of several indicators of the three components of the Information Tool. For instance, the first and third data concern the

[25] Order 4072/April 2011, *ibid.*
[26] The ANS is the Platform to which universities report data on a periodical – mostly yearly – basis. It is managed by the Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI, for its acronym in Romanian). See: https://date.invatamant-superior.ro/#ss

student/teacher ratio included in the teaching dimension of the *Profile* component and could be considered for the *Ranking* component as well, as will be shown in the relevant section. Similarly, data on publications can be used as the bases of different indicators – both activity and performance oriented, hence for the *Profile* and *Ranking* components, respectively.

43. One key data/indicator that will be part of these Supporting Indicators in the database is the student enrolment numbers in all cycles per fundamental field. The centrality of this indicator lies in the fact that the definition of university types, which is a specific request of the Ministry of Education and ARACIS as a criterion to take into account in the *Categorization* part of the classification, will be defined in accordance to the proportional number of student enrolments per fundamental field. This way of defining university types is also based on the Ministry and ARACIS decisions agreed in meetings held during the preparation phase of this draft. The definition of university types, thus, will emerge from the summation of enrolments in the study fields encompassed in each fundamental field as defined by the relevant legislation. This particular breakdown of student enrolments per fundamental field will be used only for the purposes of creating the types of universities that will be integrated in the Categorization component of this Information Tool. They will not be used as an indicator in either the *Profile* or the *Ranking* indicators according to how these have been defined so far in this proposal.

44. Regarding the Additional Indicators a special note is on order regarding their possible use in different updates of the Information Tool. These indicators and their data will not be directly used in the indicators of the methodology finally decided for the Information Tool. They are included in the database because it is data that could be used for more ad hoc studies that could combine these additional indicators with those of the Information Tool. They could also be collected for future editions of the *Rankings* component of the Information Tool, and, in fact, their incorporation responds mainly to a request related to this potential use of the Additional Indicators. Yet, it is highly recommended that once the methodology and the indicators for the classifications and rankings are decided, subsequent editions should continue applying that same methodology unless a new process of consultation is carried out to discuss and agree on the changes. Furthermore, keeping the same methodology across time is critical to allow the tracking of changes in the system, one of the key purposes of putting in place a system to classify universities and rank study programs.

Categorization of Universities into Classes A, B, and C

45. The National Law for Education 1/2011 in Romania establishes that universities should be classified in three categories or classes. In the Law, category A is defined to correspond with universities mainly for teaching (education); category B, for universities for teaching (education) and scientific research and artistic creation; and C, for universities of advanced research and teaching (education).[27]

46. Four key aspects of the Law's definition of these three categories have implications for the design of the methodology for categorizing universities. First, the way in which the categories are defined imply a uni-dimensional indicator related to research. This emerges

[27] National Law of Education 1/2011, art 193, para 4

from the observation that teaching stays the same in the three categories and the only variable element across the categories is research – in category A research is not present, in category B is included and in category C is qualified as "advanced". While methodologically this means that the indicators that will be used to allocate universities to categories A, B, and C will have to be research-related ones it also places an important constraint if the aim is to develop an approach to classifying universities that highlights horizontal diversity. Second, the definition of category C may imply a difference of quality of research in relation to how category B is defined. This can lead to the interpretation of this categorization as a way of organising universities from low to high quality instead of in terms of their emphasis on different missions without value judgment for these missions. Third, the law establishes that classifications concern universities as whole institutions, which means that the methodology has to take into account that only one category is to be granted per university. Fourth, universities of arts are, by definition, categorized under 'B' in the law, which makes redundant any search for indicators to decide to which category these universities should be allocated.

47. One possible way of overcoming the first issue, the uni-dimensional character of the categories A, B, and C, is to combine these categories with the *Profiles* of universities that will emerge from the observation of demographic and activity indicators. These profiles could be seen as alternative forms of defining different types of universities, i.e. of classifying them. In this manner the classification of universities could show, for instance that a given university in the category A, focused on teaching, may at the same time be considered a "regionally-focused university" if indicators in the *Profiles* component related to regional engagement indicate so. This could counter—balance possible interpretations of this *Categorization* of universities as valuing positively or negatively the different missions of universities. This option could be combined with the use of some of the Descriptive Indicators proposed earlier so additional types or classes of universities could be defined in terms of their size, as it was suggested in the initial phases of consultation about this methodology, or type of ownership, for instance.

48. Another way to address the focus of these categories' definition on research is to pre-establish types of universities which are to be taken into account when allocating them to categories A, B, and C. This could counter potential interpretations of this categorisation as implying value judgments since, for example, a military university may not be expected to focus on research. A variety of stakeholders have manifested in different ways their preference for this option of pre-establishing university types. This preference has been gathered in meetings with both the Ministry of Education and ARACIS, and it was also reflected in the approach underpinning the definition of nine categories of universities devised and agreed by the Council of Rectors (CoR) in Constanta in 2017.[28]

49. There are different ways in which university types can be pre-established. These include the purely legal/legally-based definitions, as in the well-known cases of Germany, France, Denmark and Belgium or a similar option of basing these categories on theoretical or traditionally established ones that may not be legally defined, as in the case of Chile[29], as

[28] These categories defined by the Council of Rectors were (1) Humboldtian universities; (2) Arts and vocational universities; (3) comprehensive universities; (4) polytechnic universities; (5) medicine and pharmacy universities; (6) universities of agronomy and veterinary medicine; (7) military universities; (8) universities of economics and administration; (9) university of theology. Interview with COR representative

[29] Brunner, J. (2015) *ibid.*

mentioned earlier. Another option to pre-establish types of universities, which has been adopted in the implementation of the methodology for classifying universities and ranking study programmes conducted in 2012, is to group universities on the bases of their self-declared mission.

50. Both legally-defined and self-declared mission-based classifications have their limitations. The former results in classification systems that leave little room for the reflection of an evolving landscape of higher education in the country. This is important because in recent years the landscape of higher education institutions has undergone significant changes. One of these key changes is the homogenization stemming from the establishment of the three cycles of degree programs in the context of the Bologna process and from the impact of rankings, mostly based on research outputs, on the reputation and access to resources. At the same time, the sector has gone through an important process of heterogenization mainly due to the massification of higher education and the expansion of the sector. The result of this double process of homogenization and heterogenization in terms of classification is that it becomes difficult to draw clear dividing lines between the different types of HEI whose missions have become increasingly complex and that new and different types of institutions do not always fall within these traditionally established categories. This has brought into question the validity of legally or theoretically-established distinctions and led to an increasing interest in developing evidence-based forms of classification of HEI that can capture the diversity and dynamism of the sector. The latter option, self-declared mission-based classifications, need to take into account that missions reported in this way would not only need verification processes vis-à-vis their legal statutes, but, crucially, these declarations even if verified, may not necessarily reflect the actual actions of the universities for different reasons. For instance, they may reflect more marketing purposes or may be out-dated.

51. In view of the limitations of the purely legal-based and self-declared mission-based approaches to group universities, it has been agreed with the counterparts that a mix of a legally-defined and empirically-based approach to define university types will be adopted. This approach is in line with a classification that is data-driven since it reflects the actual activities of universities and allows for the observance of changes in the system. At the same time, this approach incorporates the consensual preference among stakeholders for pre-defined types of universities. Yet, differently from theoretically defined categories, the grouping will be based on a single criteria applied throughout to all institutions[30] and the data used to define these types will be publicly available data hence will be verifiable. Also, precisely because it is data-based, this approach to grouping universities will allow for flexibility in the definition of these groups and, therefore, for adaptation to future changes in the higher education landscape if significant differences in level of enrolments per fundamental fields and throughout time are identified. Keeping track of this dynamism could allow different stakeholders to take actions — to realign its missions, in the case of HEI, take public policy decisions among policy makers, or to make up-to-date informed choices for future studies for students, for instance.

[30] As it can be observed from the nine categories of universities listed in the above footnote, different criteria appear to be underpinning the definition of these categories, including theoretical definitions of universities, levels of degrees conferred, and subjects covered.

Box 9: Six types of universities based on fundamental fields as per GD 140/2017

Universities of...
1. Mathematics and natural sciences
2. Engineering
3. Biological and biomedical sciences
4. Social sciences
5. Humanities and arts
6. Physical education and sport sciences

52. For this purpose, it has been agreed with the counterparts that university types will emerge from the legally defined fundamental fields in which universities are organised by Governmental Directives and from students' enrolments in these fields. Thus, university types will coincide with the six (6) fundamental fields established every year by Government Decisions (GD). The corresponding GD currently in place is no. 140/2017 and establishes these fields: (1) mathematics and natural sciences; (2) engineering; (3) biological and biomedical sciences; (4) social sciences; (5) humanities and arts; and (6) physical education and sport sciences.[31] To take into account the actual enrolment levels in these fields, following on a proposal from ARACIS, the minimum threshold for a university to be considered active in a given fundamental field is to be at least 5% of its total enrolments in that field.

53. The second aspect of the law's definition of the categories A, B, and C that has methodological implications is that in category C research is defined as "advanced" as opposed to simply research in category B. This way of differentiating categories B and C can lead to interpretations of the classification as a form of evaluating quality instead of as trying to identify different characteristics or missions of the universities. This can be reinforced by the current state of the global higher education sector in which the race to be considered a world-class university is increasingly determined by international rankings that tend to focus on measuring the quality of research outputs to the detriment of achievements in the other mission traditionally considered to be at the heart of universities – teaching.

Box 10: Indicator proposed for universities types

- Definition:
  UNIVERSITY'S FIELD OF SPECIALIZATION
- Metric:
  Proportion of students enrolled in all cycles per fundamental field.
- Threshold:
  At least 5% of enrolments
- Categories (groups)
  Six (6) fundamental fields defined by legislation
- Reference:
  Government Directive establishing the nomenclature that organises study programmes in fundamental fields
- Rationale:
  Allows definition types of universities in line with existent consensus but on empirical bases, adding dynamism and transparency

54. The recommendation to reduce the possibility interpretations of the *Categorization* as a ranking is to find a right mix between activity and performance indicators in the process of categorizing universities. More specifically the suggestion is to include a significant number of activity-based indicators in the mix of indicators that will be used to decide the allocation of universities to these three categories. The indicators that will be used to allocate universities to categories A. B, and C will have to be research-related ones, as explained earlier, because of the way in which the categories have been defined in the law. But the more activity-based indicators – i.e. indicators that look at quantity, intentions, relative

[31] GD140/2017, *ibid*. See also note 24

volumes, etc. –, the more the bias towards interpreting the Categorization as a quality ranking that highlights vertical diversity can be diminished. In other words, the allocation of universities to categories A, B, and C could include some indicators of the *Ranking* component but should rely more on indicators from the *Profile* component of the Information Tool. The indicators that are suggested to be taken into account for the categorization of universities along the lines proposed here are presented in Table 2.

55. Further elements of this suggestion to reduce the possibility of interpreting the *Categorization* as a ranking is that in the aggregation of indicators to allocate universities to each category weightings should be avoided, and that information about research quality should be concentrated in the *Ranking* component. The suggestion to avoid weightings is line with the methodological previsions mentioned earlier and is recommended if the *Categorization* is to consider both missions – teaching (education) and research – equally valuable. Concentrating the information regarding quality of research in the *Ranking* component not only avoids interpretations of the Categorization as a uni-dimensional ranking but also for more nuanced view since this will be directly linked to the fields of study in which the university works.

Table 2. Suggested Indicators for the Categorization Component

From the Profile component
1. Number of publications by all research and teaching staff
2. Ratio of publications per research and teaching staff
3. Professional and commercial publications per research and teaching staff
4. Income from research grants and projects as a proportion of the total university income
5. Expenditure in research as a proportion of the total university expenses
6. Access to online databases and journals – national and international
7. Proportion of academic staff with foreign nationalities and/or degrees in relation to total number of academic staff.
8. Patents granted per total number of academic staff
9. New enterprises: start-ups and spin-offs per total number of academic staff
10. Income generated for the university from patents, licenses, copyrights, new enterprises, and contracted advisory work
From the Rankings component
11. Scientific output over previous four years based on a scoring system for articles published (by UEFISCDI)
13. Impact of scientific activity measured by M-Index

56. Nevertheless, the mix of performance and activity based indicators that will count in the categorization of universities in A, B, and C will be decided by the agencies that will implement the methodology suggested for this Information Tool that will allow for the classification of universities and ranking of study programmes required by the law.

57. The third aspect of the law's definition of the categories A, B, and C contrasts with a categorization of universities that is connected to types of universities defined in terms of fundamental fields of specialization, which is suggested above as a way of counter-

balancing the categories' focus on research. The law establishes that the classification in categories A, B, and C regards universities as a whole, as opposed to rankings which concern separate study programmes. It draws from this that only one category per institution should be granted. The majority of universities in Romania are specialised in only one fundamental field and hence differentiation of universities by type based on the fundamental fields in which they are specialized will lead to the allocation of the whole university to only one category. Yet, universities that have significant number of enrolments in more than one fundamental field may – defined as more than 5% (see Box 10) – theoretically, qualify to be allocated into more than one of these categories.

58. Several options were explored to resolve this issue. One possibility could be to conduct the empirical research and with the results consult universities which, in view of their missions or objectives can negotiate in which category they seem them better. Another option is to leave the definition of an aggregation strategy for allocating universities active in more than one fundamental field to one single category to be developed *ex-post* after internal analysis of the results is done by the agencies involved in conducting the classification exercise.

59. A third option is favoured in this proposal. It consists of adding up the frequency of appearances of categories A, B, and C in each fundamental field, taking into account the relevance of enrolments in that field within the institution. This option allows both to comply with the law requirement to allocate universities to only one category and at the same time retain information per university field of specialization for those that are specialised in more than one fundamental field. More details about this option are offered below in the paragraphs where the strategy to allocate universities to the categories A, B, and C is presented.

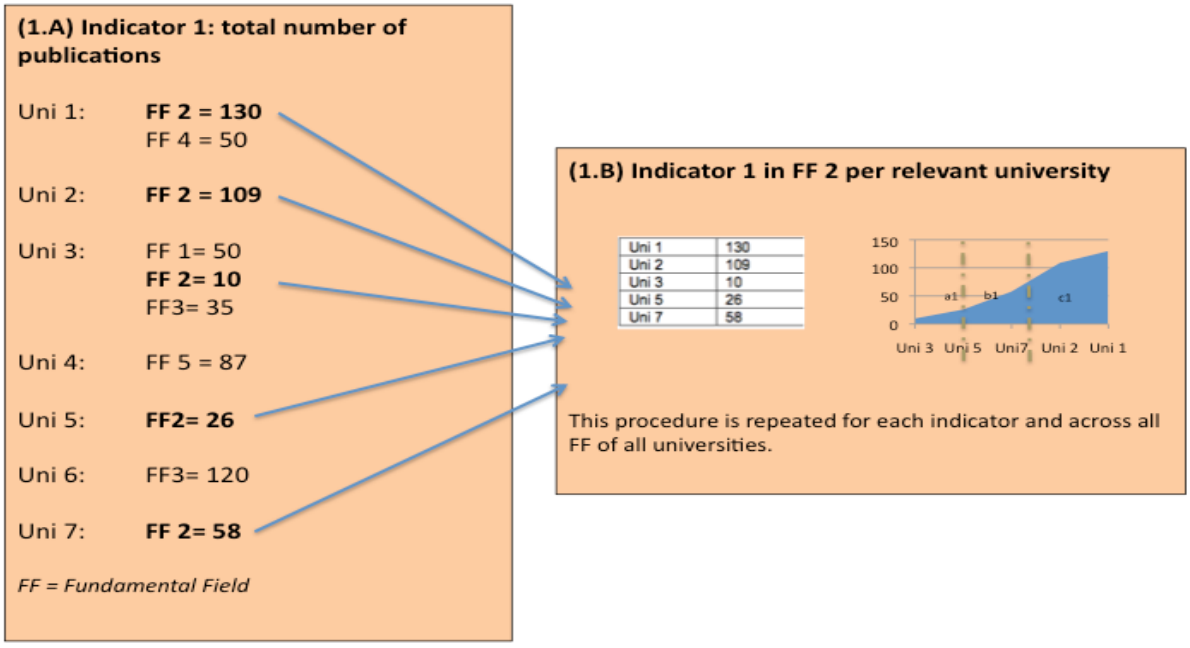
60. The final aspect of the law that has implications for the methodology presented here is that universities of art are already by definition allocated to category B in the law. According to the GD that currently defines the fundamental fields and their corresponding branches of science and fields of study[32], art is a branch of science within the fundamental field "Humanities and Arts". In view of the law, the suggestion is that for categorization purposes all universities that are active only in fields of studies that correspond to the branch of science "art" are not taken into account. In the case of universities that cover other branches of science in addition to art, the suggestion is that data coming only from those fields of study related to the other branches of science are considered in the process of categorization. However, this suggestion is only valid for the process of categorizing universities. In the cases of defining the *Profiles* of universities and *Ranking* of study programs, the data corresponding to the study fields grouped under the branch of science art are of course to be taken into account.

61. Bearing in mind all of the above considerations regarding the implications of the law for the categorization of universities, a three-step strategy to allocate universities to

[32] GD currently in place is no. 140/2017 and it is worth to keep in mind that according to this GD there are 6 fundamental fields that cover 34 branches of science for both Bachelors and Masters degrees; these branches encompass 86 fields of study (or domains) which in turn contain 368 study programs for BA, and 78 fields of study (or domains) which in turn contain 3,156 study programs for MA.

categories A, B and C has been developed. The first step is to compile the data for each university at the level of single indicators selected to be part of the categorization process and, importantly, to do it per fundamental field. Then, the distribution of the values of each single indicator per fundamental field in which the enrolment levels are at least 5% of the total enrolments of the university is to be observed for each relevant university. On those distributions, the cut-off points at the first and second thirds of the distributions should be set. In all of the indicators that are suggested to be part of the categorization process – particularly those that regard research activity – the more the better, therefore the intervals can be easily determined for each indicator. These intervals will be called a1, b1 and c1, where c1 corresponds to the top third, b1, to the middle third, and a1 to the bottom third of the distribution. The labels a1, b1, and c1 represent the categories A, B, and C stipulated in the law, but at this stage only referring to the distribution of the value of the selected indicators in each of the fundamental fields in which the universities are active and have the minimum level of enrolment established. Figure 2 illustrates this first step of the suggested aggregation strategy to categorize universities.

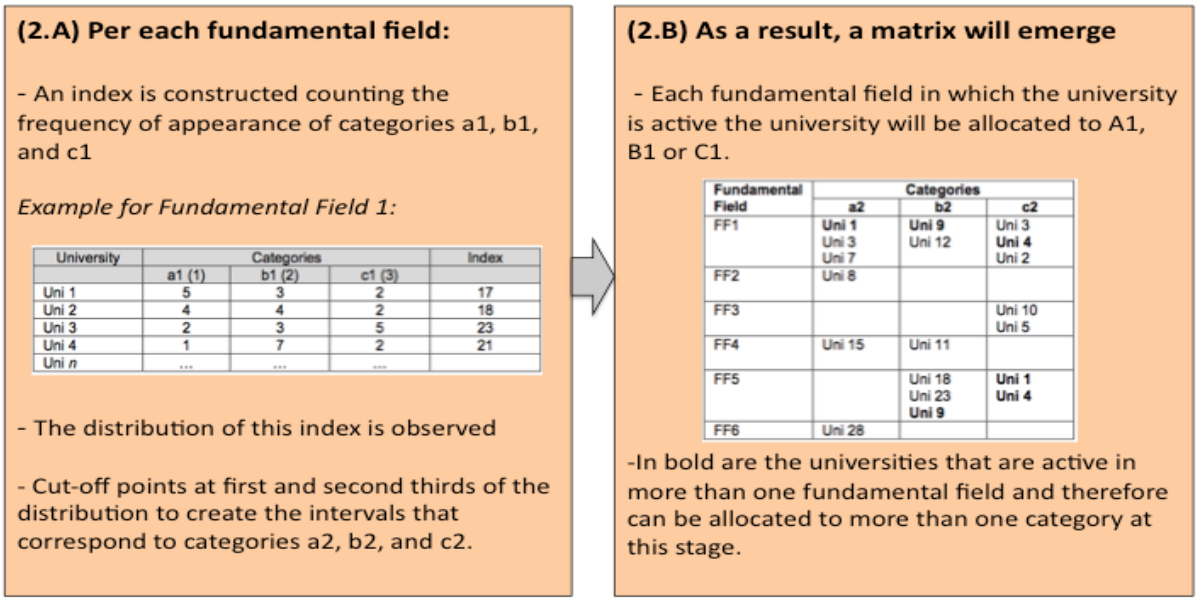
Figure 2. Step 1 of the process for allocating universities to classes A, B and C



62. The second step involves the aggregation of the data at the level of fundamental fields and thus the allocation of categories A, B, and C to different university types, defined in terms of the areas of specialisation according to fundamental fields and numbers of enrolments as explained earlier. In this second step, the process consists of counting the number of times that each university fell into the categories a1, b1, and c1 at the level of single indicators in each fundamental field in which it operates. The total number of appearances per fundamental field in each university cannot surpass the total number of indicators selected for the *Categorization* component. Then, a numerical value is allocated to these categories – 1 for a1, 2 to b1, and 3 to c1. It is worth noting that the definition of categories A, B, and C in the law refers to an ordinal variable and therefore allocating 3 to c1 corresponds to a high level of research activity since the indicators that compose the index will draw mainly, as suggested above, on activity-based rather than on performance-based

indicators. Next, for each fundamental field within each university the number of times that they fell into each category will be multiplied by that numerical value and then added up to create an index. The distribution of this index is observed to define the cut off points at the first and second thirds of the distribution to determine which universities fall into the classes a2, b2, and c2 in each of the fundamental fields that they are active. The categories are labelled a2, b2, and c2 because they echo the categories A, B, and C defined in the law but they refer to the fundamental fields and not to the university level. Figure 3 summarises this second step of the suggested aggregation strategy.

Figure 3. Step 2 of the process for allocating universities to classes A, B and C



63. The third step is a suggestion for the aggregation of the data regarding universities per fundamental field to the level of single institutions as required by law. While this is to be defined at the moment of implementation, one suggestion to comply with the law requirement that could be considered is to aggregate again the number of a2, b2, and c2 obtained by each university in all of the fundamental fields in which it is active and according to the levels of students' enrolments in these fields. While 75% of the universities of Romania can be considered as specialised in one single field, meaning that 75% or more of its enrolments are in study fields that belong to only one of the six fundamental fields used to define university types in this methodology, 25% of universities are active in more than one fundamental field. While those fields that enrol less than one single fundamental field constitute a clear-cut university type and the category to which they were allocated in the previous step already corresponds to the university as a whole, for 25% percent of the institutions a further step would be necessary. The proposal is similar to the previous steps – counting the frequency with which the university falls into each category in the fundamental fields in which it is active. The additional element is that to decide in the case of universities active in two fundamental fields, for instance, where these fall into different categories, a higher level of students' enrolments can be the criteria to define which categorization prevails.

64. Yet, decisions about the best strategy to aggregate these indicators needs to be based on some level of consensus. This is especially important if the weighting option is considered, because some indicators may reflect better the type of research activities developed in certain types of universities than in others. This could be the case, for instance, of knowledge transfer indicators that could be considered for inclusion in the set of indicators to be used to determine the allocation of universities to these categories.

Indicators for the *Profile* and *Ranking* Components

65. The indicators included in the *Profile* component of the Information Tool emerged from the rationalisation of indicators developed by different stakeholders of the higher education system of Romania since the sanctioning of the National Law of Education 1 in 2011 and from analysis of several international experiences. The former comprises insights from the methodology approved in April 2011 and implemented the following year,[33] the proposals for indicators for classification of universities advanced by the National Association of Students Organisations of Romania (ANOSR for its acronym in Romanian),[34] the discussions held by university rectors in 2017 to redefine the 2011 methodology taking into account the students' proposal and the quality indicators set out in the 2017 methodology for the financing of public universities developed by the CNFIS.[35] The international experiences revised include those mentioned in the previous section – U-map and U-Multirank, the Carnegie Classifications, CHE Rankings – and additional experiences such as the CENSIS Ranking from Italy and the IVIE-BBVA U-Ranking from Spain, and classifications made using the data gathered in the Aquameth-EUMIDA-ETER projects.[36] In addition, specific sets of indicators related to regional and societal engagement as well as knowledge transfer were explored including the Russell Report indicators for measuring third stream activity,[37] the study to measure the contribution of higher education to innovation in the EU by Benneworth and others[38] and the Carnegie Classification on Community Engagement.[39]

66. After dissecting, comparing, and subsuming the nationally developed indicators, the four to five dimensions around which these indicators were originally built were maintained, as a certain level of consensus about them emerged from the revised documents, and a new one was added drawing on international experience. At the same time, new forms of defining these indicators and new indicators itself are suggested in this

[33] Order 4072/April 2011, *ibid.*
[34] ANOSR (undated) "University classification: between usefulness and university marketing exercise. Students' perspective", Bucharest: ANOSR.
[35] Order 3279/2017 "Methodology for the allocation of the budgetary funds for the basic financing and the additional financing of the Romanian higher education institutions for the year 2017", Ministry of National Education of Romania, OFFICIAL GAZETTE NO. 146, 27 February 2017. Annex 5. Available at: http://www.cnfis.ro/wp-content/uploads/2017/02/PropunereCNFIS_Metodologie_2017.pdf
[36] Bonaccorsi, et. al, (2011) The European university landscape: A micro characterization based on evidence from the Aquameth project in Research Policy 40: 148–164 and (2014), ibid; and Lepori, B. et.al. (2010) Patterns of Subject Mix in Higher Education Institutions: A First Empirical Analysis Using the AQUAMETH Database in Minerva (2010) 48:73–99.
[37] Molas-Gallart, J. et.al. (2002) "Measuring third stream activities. Final report to the Russell Group of Universities." SPRU, University of Sussex.
[38] Benneworth, P. et.al. (2017) "Study on measuring the contribution of higher education to innovation capacity in the EU" Final Report prepared for the European Commission, Directorate General for Education and Culture. Luxembourg: Publications Office of the European Union. Available at: https://www.researchgate.net/publication/319128923.
[39] http://nerche.org/index.php?option=com_content&view=article&id=341&Itemid=92

methodology with the aim of evening-up the aspects explored in each for the dimensions, addressing perceived priorities from different stakeholders in the Romanian HE system, and taking into account main action areas set out in the Romanian Tertiary Education strategy 2015-2020.[40] Many of the indicators developed both nationally and internationally that were analysed and taken into account in this process of rationalising, incorporating and redefining indicators were originally aimed at evaluating quality rather than generating a classification system focused on capturing the diversity of the higher education system. Therefore, they were taken as a point of reference and adapted according to the approach to classifications/categorizations set out for this proposed methodology.

67. In the decisions to merge, include, and redefine the indicators proposed for this component of the Information Tool, an initial check on feasibility regarding the availability of data was conducted. This was based on the revision of what is already reported by universities to government agencies in Romania, taking as a point of reference the quality indicators referred to in the CNFIS Methodology for establishing the Supplementary Funds of public universities.[41] Regardless, what would be desirable for universities to report to achieve the goals set out for the development of this classification and possibilities of international comparability were taken into account in the design of the dimensions and indicators.

68. The six dimensions of this component of the Information Tool are (1) education, (2) research, (3) internationalisation, (4) regional and social engagement, (5) knowledge transfer, and (6) students profile. The dimensions related to the so-called "third mission of universities" – the mission beyond education and research and concerning knowledge exchange and productive interactions with business, public sector organisations and the wider community[42] - are presented here in three different dimensions for the sake of clearer identification of its components. Yet, this grouping of the "third mission" indicators, for instance, could be merged in one single dimension concerning university connections with the broader society and even contain the dimension of internationalisation. In this case, to avoid an accumulation of too many indicators per dimension, social inclusion could constitute a separate dimension on its own. This division of the "third mission" into different dimensions as proposed here, however, was chosen because, as explained above, it seemed to represent better the current consensus among different stakeholders in the Romanian HE system about the organisation of classification indicators. Regarding the inclusion of the students' profile dimension, this is in line with observations that emerged during consultations leading to the design of U-Map which indicated that "the nature of a higher education institution is partly determined by its student body."[43] Furthermore, the Carnegie Classifications, also includes two specific classifications that focus on the characteristics of the university's students.

69. Within each of the six dimensions of the Profile component, the indicators are organised around three aspects: production, resources, and communication and

[40] National Strategy for Tertiary Education in Romania 2015-2020, *op cit.*
[41] Order 3279/2017 *op cit.*
[42] Molas-Gallart *et al*., 2002 *op cit*
[43] van Vught et al (2010) U-Map, The European Classification of Higher Education Institutions. Final Report to the EC, Education and Culture DG, Socrates LLL Programme. p. 28.

digitalisation.[44] Including indicators looking at communication and digitalisation aspects along the different dimensions of this methodology thus contributes to building a profile of the institutions that look at their degree of modernisation and keeping up with the use of technology. But, the incorporation of indicators related to communication and digitalisation is also in line with the Romania National Strategy for Tertiary Education, in particular with regards to actions to be taken to enhance ICT offerings in the context of promoting high quality tertiary education, and, in turn, seeks to address perceived concerns with plagiarism in Romanian higher education system that in turn affects its quality. Thus, this incorporation also tries to exploit the performative effects of the use of indicators. It could be expected that incorporating indicators related to communication and digitalisation would lead to increasing the use of these technologies and thus contribute to improve the quality of tertiary education in the country.

70. The indicators included in these dimensions will consider absolute volumes as well as relative ones. The latter will be aimed at normalising the observed data for different university sizes to make them comparable. The parameters of reference for this normalisation will be three indicators of size: total number of enrolled students, total numbers of staff and total expenditure.

71. The next pages present the list of dimensions and indicators, organized by aspects. Table 3 presents the list of indicators suggested for the *Profiles* component and dimension and some comments about alternative indicators that could be considered follows. Out of the 36 indicators proposed for this component, nine (9) (around 25%) are new indicators added to those that have been emerged for the rationalisation referred to earlier of the indicators developed in different instances in Romania since the approval of the Education Law 1 in 2011. Further details about these indicators are presented in Annex 1, and Annex 2 includes the operationalization of these suggested indicators in corresponding algorithms.

Table 3. Dimensions and Indicators of Profile Component

Dimension	Aspect	Indicators
D1. Education	Production	1.1. Graduates per study cycle offered (bachelor's, master's, doctorates) 1.2. Range of study programmes taught
	Resources	1.3. Teacher/student ratio 1.4. Number of different types of teaching rooms (new) 1.5. Revenues for education as a proportion of the total university income
	Communication and Digitalisation (new)	1.6. Number of study rooms technologically equipped for teaching purposes per total number of teaching rooms. 1.7. Use of online teaching resources (including anti-plagiarism software)
D2. Research activity	Production	2.1. Number of publications by all research and teaching staff

[44] This organisation of the indicators in aspects and the dimension of communication and digitalisation are adaptations from the methodologies for the Spanish U-Ranking and the Italian University Ranking by Censis. Pérez, F. and J. Aldás (2017) U-Ranking. Indicadores Sintéticos de las Universdades Españolas. Valencia: IVIE-BBVA (junio),DOI: http://dx.medra.org/10.12842/RANKINGS_SP_ISSUE_2017; Censis (2017) La Classifica Censis delle Università italiane (edizione 2017/2018) http://www.censis.it/16?shadow_collana=52) and Censis (2017) Nota Metodológica Completa

Dimension	Aspect	Indicators
		2.2. Ratio of publications per research and teaching staff 2.3. Professional and commercial publications per research and teaching staff 2.4. Number of cultural and artistic events organised by the university's academic staff (new)
	Resources	2.5. Income from research grants and projects as a proportion of the total university income 2.6. Expenditure in research as a proportion of the total university expenses
	Communication and Digitalisation (new)	2.7. Access to online databases and journals – national and international
D3. Internationalisation	Production	3.1. Proportion of international students enrolled in any study cycle in relation to total number of students enrolled. 3.2. Proportion of incoming exchange students in relation to total number of students enrolled. 3.3. Proportion of outgoing exchange students in relation to total number of students enrolled
	Resources	3.4. Proportion of academic staff with foreign nationalities and/or degrees in relation to total number of academic staff. 3.5. Expenditure in activities to promote and support the international profile of the university as a proportion of the total university expenses.
	Communication and Digitalisation (new)	3.6. Proportion of institutional web and social media pages available in English and other non-official Romanian languages (new)
D4. Social and regional engagement	Production	4.1. Number of graduates coming from SE disadvantaged backgrounds: total and per study cycle 4.2. Number of enrolments from the region where the university is located: total and per study cycle.
	Resources	4.3. Number of students with general scholarships and of those with needs-based scholarships, both as a proportion of total number of students enrolled: total and per study cycle 4.4. Expenditure in activities supporting institutional engagement with community as a proportion of total university expenses
	Communication and Digitalisation (new)	4.5. Accessibility of institutional webpage, according to international standards (new)
D5. Knowledge transfer	Production	5.1. Patents granted per total number of academic staff 5.2. New enterprises: start-ups and spin-offs per total number of academic staff
	Resources	5.3. Income generated for the university from patents, licenses, copyrights, new enterprises, and contracted advisory work 5.4. Expenditure in knowledge transfer activities as a proportion of total university expenses.

Dimension	Aspect	Indicators
	Communication and Digitalisation (new)	5.5. Presence in traditional and social media by staff relating knowledge generated at the institution and transfer processes between university and society (new)
D6. Students (new)	Production	6.1. Students enrolled in different modes of study (full-time, part-time, distance learning, and evening) as a proportion of total number of students enrolled (new) 6.2 Students enrolled in first year by age for bachelor's and master's level studies 6.3. Proportion of fee-paying students in relation to state-funded students
	Resources	6.4. Average fee costs per year, at bachelor's and master's level (new) 6.5. Proportion of total university budget that comes from fee payments (new)
	Communications and digitalisation (new)	6.6. Number of students that use online facilities provided by the university to enrol and pay fees as a proportion of those that do these in other ways. (new)

72. In the dimension Education (D1) the first indicator proposed is the number of graduates per study cycle. This measure seeks to give an indication of the profile and focus of the institution in terms of the level of studies on which it is concentrated, which replicates, to some extent, the focus of the Carnegie Basic Classification. This indicator nevertheless draws in part on similar indicators included in the proposal for indicators for classifying universities in Romania developed by the students' association (ANOSR)[45] and the debates on these indicators that revolved around the availability of U-Multirank international benchmarks.[46] A similar indicator is also included in the list of quality indicators developed by CNFIS for the distribution of Supplementary Funds to universities.[47] The indicator was modified here in relation to those nationally developed indicators and does not refer to rate of graduation because it does not seek to evaluate quality or efficiency of the universities but to describe them.

73. The other indicator that corresponds to the production aspect of the dimension of education regarding the range of study programmes offered. This proposed indicator seeks to describe the range of the offers by means of counting the number programmes offered. This indicator was part of the 2011 Methodology[48] developed to assess universities for the purposes of classifying them, and it is kept here because it provides a very comprehensive and 'birds-eye" perspective to the production in terms of what the university offers. This decision is backed by the fact that it is an indicator also included in the descriptive-oriented classification that is U-Map.

74. Three indicators account for the resources dedicated to education in the universities. The first regards human resources in terms of student/teacher ratio, the second regards

[45] ANOSR (undated) *op cit.*
[46] Untitled, undated and unpublished document facilitated to the author, *op cit.*
[47] Order 3279/2017 *op cit.*
[48] Order 4072/April 2011, *op. cit.*

infrastructure resources and the last one, monetary resources. It is worth noting that there are available data for international comparisons of student/teacher ratio (OECD) and that constitutes an additional reason to include that indicator in this proposal. In terms of the infrastructure, the indicator seeks to subsume several indicators referred to this aspect of university facilities, especially expressed in the students' association proposal. With regards to expenditures, the way it is proposed here to measure it tries to put it in relation not only to the importance given to research but also to the overall activities, including "third mission"-related ones.

75. The indicators related to the communication and digitalisation aspects of the education dimension look at the hardware and software used for teaching and learning purposes. In particular, it looks at the availability and use of marking software that could reduce the incidence of plagiarism in the system. However, the feasibility of this indicator needs to be explored as it does not emerge clearly how to measure it and verify the measurements.

76. Many other indicators of those included in the various developments by different stakeholders for classification and quality assessment purposes were considered but discarded for various reasons. Some indicators overlap with others, and most of the comprehensive ones were chosen or developed, like in the case of the count of different types of teaching rooms, also for the sake of simplicity in the methodology. However, for this indicator to be relevant, it would be important to specify clearly the different categories of rooms to be considered, such as laboratories, gyms, teaching rooms, auditoriums, etc. The ratio of teachers below 40 years of age and total number of teachers, used in CNFIS' financing methodology and proposed by students, was discarded because it is used as a proxy to teaching quality and the Profile component is not aimed at assessing quality. Similarly, the proportion of teaching staff with PhDs pertains more to indicators that seek to evaluate quality rather than describing the profile of an institution.

77. Student satisfaction with the learning experience at the university reflects important information for a classification built with objectives of working as a transparency tool that can inform, for instance, prospective students. But, the conclusion was that, again, this indicator measures more a perception of the quality of the service provided than an objective measurement of quality of the institution. This indicator, therefore, will be included in the *Ranking* component of the Information Tool.

78. To capture the production aspect of Research (D2), four indicators are particularly useful in covering the different types of universities that conform the HE system in Romania. The inclusion of an indicator measuring academic publications in both absolute and relative numbers, reflect the fact that while the volume disregarding the size of the institution can mean an important level of repercussions for the research produced by that institution, the level of research activity in relation to the number of staff reveals an institution profile. At the same time, research production is observed in terms of how active and engaged the institution is in research, and it does not seek to assess the quality of its production. Therefore, there is no particular indicator that seeks to measure the quality of academic staff publications.

79. The inclusion of indicators accounting for professional publications and for numbers of public cultural and artistic events seek to consider for diverse types if institutions. Some institutions may be involved in other forms of research that lead to less traditional forms of outputs. The indicator measuring cultural and artistic events is included because according to the exploration of diverse international experiences this is a generally accepted indicator of the level of activities in arts and architecture, and the measurement of these activities needs to be included in this methodology, because according to the Romanian Law 1 on Education, class B of universities comprises institutions focused on education and research and or artistic production.

80. Indicators related to both the income that comes from research contracts and grants and the expenditure of the university in research related activities and resources are the two indicators proposed for the resources aspects of this dimension. The former is designed in a manner that seeks to measure the relative importance of these funds in the total of the funds available for the university. The latter looks at the relevance attributed by the university to research in relation to its other missions. It is proposed that, to reduce the number of indicators, income should be computed including grants and projects from national and international as well as private, public, and not-for-profit funders. This synthesizes different indicators proposed by aforementioned national stakeholders.

81. Still, in relation to research, one indicator is proposed to look at the services offered by the university to facilitate research. The access to international online databases and bibliographic resources is crucial in that respect. As such an indicator to measure it on the bases of the number of subscriptions is proposed.

82. As explained in the more detailed descriptions offered in Table 5, presenting the indicators for D2, many indicators proposed by national HE stakeholders have been reduced. Others have been excluded. Among the latter are indicators on prizes and awards, not only because these are more related to measuring excellence in research but also because of the difficulty of determining which ones to consider. Doctoral thesis production could have been included in this list of indicators. However, they were excluded because they are already accounted for in indicator 1.1 in the teaching dimension. Yet the purposes are different in these dimensions so its inclusion could be re-evaluated in the context of the consultation phase.

83. In the Internationalisation (D3) dimension, the first and second indicators regard students and the third one academic staff. The first indicator is the proportion of international students enrolled in the university. It is proposed to measure this indicator taking into account students holding a foreign degree at entrance and not in relation to students' nationality. This is because holding a foreign degree is a sign of having been educated in a different system and culture. Foreign nationals may have been educated in Romania. Counting students with foreign degrees, then, can better reflect an international richness of the institutions and an assumed perception on the part of enrolled students that the institution welcomes international students. However, it remains to be confirmed if this data is readily available. A similar rationale applies for the preference of looking at the number of foreign academic staff, both with regards to the institution that awarded their degrees and to their nationalities, over staff exchanges. However, in terms of student mobility

both inward and outward student mobility are considered. While inward student mobility may reflect a perception of an internationally oriented institution, as well as the fact that the presence of exchange students strengthens that orientation, stakeholders that participated in the first phases of consultation on these indicators pointed out to the importance of external mobility of local students too.

84. Both indicators chosen for the resources and communication and digitalisation aspects of the dimension internationalization seek to observe the institutions' commitment to acquire and maintain an international profile. The indicator regarding expenses incurred for these purposes has been adapted from the students' national association proposal whereas the indicator about the proportion of institutional web and social media pages available in English and other non-official Romanian languages is one of the nine new indicators included in this proposal as has been adapted from the methodology employed by the Censis foundation to rank universities in Italy.[49] It is important to note that the issue that emerged in discussions in Romania about indicators that revolved around the U-Multirank regarding foreign languages have been taken into account here as it is explained in more detail in Table 6, offering a more thorough description of the indicators proposed for the dimension internationalisation.

85. The first indicator included in the Regional and Social Engagement (D4) dimension is a reformulation of an indicator included in all of the sets of revised indicators that were developed in Romania. The difference is that while the number of enrolments was preferred in these nationally developed indicators, the proposal here is to look at the number of graduates. This revision aligns the indicator with one of the main action areas set out in the National Strategy for Tertiary Education: improving attainment levels of disadvantaged groups. At the same time, attainment reflects better than enrolment the ability and commitment of the university with socially disadvantaged sectors. The rationale for choosing a ratio in this case is, among other reasons, that over time a ratio can offer a better depiction of progress made.

86. The second indicator addresses the other side of this two-folded dimension and concentrates on regional involvement. Only the national students' association considered this indicator, but its inclusion is backed by other international experiences including U-Map, from where the proposed indicator was adapted, and the Carnegie Classification on size and setting, to some extent.

87. In relation to resources, the indicators proposed look at expenditures supporting community engagement and financial support given to students by the university. Since activities may vary widely from institution to institution, it is suggested here that what should be accounted for is what is registered as such in internal financial records of the university. With regards to scholarships, the indicator draws on indicators considered by different stakeholders locally in the country, but the proposal put forward here contains a number of differences that can be considered during the consultation phase. The indicator seeks to take needs-based scholarships into account. The reason is that if scholarships are needs-based, this indicator can reflect commitment with the inclusion of SE disadvantaged sectors,

[49] Censis 2017, *op.cit*

otherwise the number of scholarships granted may only reflect a focus on merit. Hence, discriminating needs-based scholarships from general scholarships accounts for efforts to include especially economically disadvantaged sectors, which are not necessarily accounted for in indicator 4.1 which uses legal definition of SE disadvantaged sectors.

88. The indicator chosen for the Communication and Digitalisation dimension concerns another specific group among the socio-economically disadvantaged – people with disabilities. Measuring the accessibility of institutional webpages according to international standards allows another way of obtaining a picture of the ICT profile of the university at the same time that it observes the commitment of the institution to facilitate access and use of their online services for this particular societal group.

89. The indicators that were discarded mainly for the sake of the clarity and focus of the methodology are those related to non-credit courses and life-long learning courses offered by the university. In different forms, these were referred to in the proposals discussed in the context of the Multi-rank benchmarks and those presented by ANOSR. These types of indicators are also included in several cases of internationally developed indicators to assess HEI involvement with the broader society beyond the academia's walls. The relevance and value of including such an indicator can be further discussed during the consultation instances.

90. The Knowledge Transfer dimension (D5) as it is proposed here aims at covering the economic and public policy components of the "third mission" of universities. The components related to involvement in social and cultural life of societies beyond the academia are covered in the previous dimension regarding regional and social engagement. In turn, the selection of indicators has taken into account that the classification is not measuring impact in the broader society of the research and activities developed in the university (therefore it does not measure the impact of the knowledge produced and disseminated by universities in the innovation that may take in the region or society by-en-large) but on what universities actually do to transfer the knowledge generated in the institutions to the non-academic world, in particular the economic and policy spheres in the case of this dimension. To avoid a pure focus on the development of process that can be difficult to measure and verify, however, the set of indicators proposed have sought to measures for activities but also inputs and outputs linked to those activities aimed at knowledge transfer.

91. Two now generally accepted indicators of knowledge transfer are proposed as the first indicators for this dimension – patents and new enterprises. The former is about granted, and not simply filed, patents. The latter comprises both start-ups and spin-offs. A clear definition should be adopted however, with regards to these two terms. The indicators are both normalised by total number of academic staff to make institutions of different sizes comparable although it remains to be defined is doctoral and/or post-doctoral students should be included in this count as they are part of the teams involved in these developments usually. The way in which the indicators are defined synthesise a number of related indicators included in the different national stakeholders' proposals and in the CNFIS methodology, all of them aforementioned.

92. With regards to resources, the indicators look at income and expenditures, and in relation to communication and digitalisation, the focus is on both traditional and social media participation. In terms of income it includes also the income generated by knowledge transfer includes that coming from contracts of academic staff in consultancy work for the private, public and non-governmental sector. This aspect of knowledge transfer is not taken into account in the other indicators proposed in this dimension, partly because it is difficult to account for if not by reference to amount of money it represents. The indicator synthesizes several indicators on revenues from services included in the 2011 methodology and in ANOSR's proposal in relation to licenses and copyrights.

93. Most of the indicators included in this dimension are generally accepted measurements to assess the connections between universities and society in terms of innovation and transfer of knowledge. However, the way in which they are groups and relate to each other, including how they operate and complement or not the indicators included in the closely related dimension of regional and social engagement can be one possible angle from where these indicators can be further explored during the consultations.

94. The Students Profile dimension (D6) concerns the way the characteristics of students' and the way in which the university interacts with them are in a mutual relation shaping the nature of the institution. The first three indicators looking at production focus on the characteristics of students' enrolment. The first one characterises the institution in relation to the most predominant modalities forms in which its students enrol – full-time, part-time, distance learning or evening programmes. It is assumed that these differences indicate different attitudes of the institution towards the needs of students. The other indicator, which looks at the age distribution of the students enrolling for the first time in either Bachelor's or Master's programs, can mean that an institution is more oriented towards life-long learning or professional formation if mature students prevail, for instance. Finally, the indicator about the proportion of fee-paying students in relation to state-funded students tries to identify changes in the supply of student places and the demand.

95. Two indicators are proposed for the resources aspect of the Students' Profile dimension. In line with the objective of making the classification methodology to work as a transparency tool informing students on their choices, an indicator regarding fee levels paid in the institutions may be useful for prospective students. Alternatively, another indicator related to fees that is proposed would be to measure how much of the total income of the university comes from students' fee payments. This can have a myriad of uses and interpretations for different stakeholders.

96. To measure the level of communication and digitalisation in relation to the profiles connecting between the students and the institutions the proposed indicator regards the use of online portals for enrolment and fee-paying. This indicator can show the level of digitalisation of university services offered to the students and, at the same time the familiarity of the students with the use of information technologies.

97. An additional possible indicator that could be discussed for the Students Profile dimension is selectivity. In several of the international experiences with classifications, including Spain and Chile, this variable has been included. Selectivity is part of the Carnegie

Undergraduate Profile Classification, too. The most common approach to measuring selectivity is to consider the minimum threshold in terms of score obtained on national entry tests and grades in secondary school that are set out or effectively at place in the different institutions. The risk with this indicator is that it can be interpreted as a proxy for quality. Yet, on the other hand, this may be very useful information for students and could be included for the sake of transparency purposes in the same way that it is proposed here to include a variable related to fee levels.

98. Regarding the *Ranking* of study programmes component, a number of starting points have been established. First, the core indicators should be based on the ones currently used by CNFIS for distribution of the Supplementary Funds for public universities. Second, some CNFIS indicators could be replaced by others that could allow to improve data quality or reducing institutional response burden. Third, both the Ministry of Education and ARACIS are interested in supplemented the breadth of the indicators beyond that used by CNFIS, in the direction of those used by BURS, the multi-dimensional ranking system in place in Bulgaria. Fourth, following from the previous point, ways could be explored to of getting labour market data and using surveys of students, employers and academics to obtain better information on the learning environment. Finally, there is also interest on the part of the counterparts to look at performance along dimensions concerning internationalisation, regional insertion and knowledge transfer.

99. A careful analysis of the indicators currently in use at CNFIS for Supplementary Funding shows that not all of them are fit-for-purpose in relation to the objective of building a ranking of study programs. For this purpose, the indicators should focus on measuring the quality of different aspects of these programmes. Table 4 presents an analysis of these indicators and at the same time shows examples of indicators that are oriented to measure activity, as in the case of the indicators proposed for the Profiles component, and those oriented to measure performance or quality.

Table 4. Suitability of existing performance Indicators in Romania for Ranking study programs purposes

Indicator	Description	Comment
C.1.1	Student: teacher ratio	Not performance
C.1.2	Master's student: Bachelor's student ratio	
C.1.3	Proportion of faculty under 40 years old	
C.1.4	Proportion of faculty eligible to supervise doctoral students	
C.2.1	Human resource quality (based on a series of "points" awarded for various academic and scientific activities based on a system devised on a disciplinary basis and managed by CNATDCU)	CNATDCU activity points represent a solution based on domestic disciplinary consensus around value of scholarly activity; may not reflect international academic norms
C.2.2	Impact of scientific activity (based on the H-Index)/ or artistic creation (using measures of artistic and cultural impact used for artistic fields as measured in C.2.1)	Heavy response burden on institutions. H-index is biased for age.

Indicator	Description	Comment
C.2.3	Scientific output over previous four years based on a scoring system for articles published (developed by UEFISCDI) and patents obtained; alternative scoring exists for athletic and artistic activities.	Heavy response burden on institutions. Similar results could likely be achieved by using external bibliometric databases such as Clarivate/Elsevier
C.2.4	Income over four previous years for scientific activity / artistic creation	Outcome measure
C.3.1	Use of ERASMUS and ERASMUS MUNDUS programs, both inbound and outbound, over the past four years	Activity, not performance, at least with respect to outbound students
C.3.2	Average proportion of foreign students enrolled over past four years	Outcome measure
C.4.1	Proportion of students from socioeconomically disadvantaged backgrounds (i.e. students with disabilities, orphans, Roma students and students from towns under 10,000 in population	Activity, not performance
C.4.2	University contribution to scholarships, most recent full year	Not performance
C.4.3	Average hours spent by undergraduates in practicum programs over past four years	Activity, not performance
C.4.4	Places in student hostels as a percentage of total student Numbers, average past four years	Not performance
C.4.5	Non-reimbursable funds obtained by the university, most recent year	Outcome measure

Source: http://www.cnfis.ro/wp-content/uploads/2012/08/PropunereCNFIS-Metodologie-repartizare-FB_FS-2014.pdf
Note: Comments are based on the analysis of WB authors

100. Looking specifically at options for Teaching Quality Indicators, it is worth noting that there are very few valid indicators of teaching quality used around the world. The main reason for this is that there is almost no agreement with respect to what the term means or how it should be measured, particularly for tertiary education programmes and institutions. Frequently, the kinds of indicators used to measure teaching quality are inputs. In Romania, currently, this means student/teacher ratios, % of faculty eligible to supervise doctoral students, % of faculty under 40 years old, etc. None of these indicators reflect learning outcomes. Another approach to teaching quality which is sometimes used is to measure student cohort completion rates. For instance, one could measure the percentage of undergraduates who entered a program of study and who graduated from that program (or that institution) within X years. Internationally, X usually equals "normal time to completion plus 1 year", so in Romania this would usually be 4 years. If the interest is on issues of performance in teaching underserved populations (e.g. rural students, students with disabilities or Roma students), it could be possible to additionally calculate specific completion rates for these populations. This is not currently done in Romania, but the data could be produced by universities institutions and collected directly from them to be included in this Information Tool database.

101. An important consideration to take into account if indicators about completion are used to measure teaching quality is whether or not to normalize completion rate data.

Completion is largely correlated with academic preparation; therefore, students in universities that are more selective tend to have better completion rates. The obvious remedy – one which is used in the French performance funding system for instance – is to normalize completion rates based on the *baccalaureate* scores of entering students. Universities that admit students with low scores and get high graduation rates would thus fare better than institutions which achieve similar graduation rates with students that enter university with top *baccalaureate* scores. From the perspective of measuring "value added" this might be a better measure; however, the audience of a transparency-based ranking might prefer an absolute value rather than a relative one.

Box 11: Teaching Quality Indicators, preferred options

- Rate of completion of bachelor's program within four years (all students)
- Rate of completion of bachelor's program within four years (underserved students)
- Rate of completion of bachelor's program within four years (all students, normalized for *Baccalaureate* scores)
- Rate of completion of bachelor's program within four years (underserved students, normalized for *Baccalaureate* scores)

102. An additional method of looking at teaching quality is to ask students about it. Preferably graduates should be consulted and the questions should focus on their views about the quality of their learning experiences. This information could draw from student surveys and more about these will be referred to later in this section.

103. In terms of research quality indicators, most ranking systems, whether national or international, include some kind of metrics with respect to research that could be considered for the purposes of the Ranking component of this Information Tool. These indicators tend to include measures which look at both quantity and quality and to this extent the indicators produced for the *Profile* component can be feed into more complex indicators regarding research quality in the Ranking component. Also, while nearly all have some bibliometric measure of total published output and impact, there is a wide range of variation in the indicators used to measure research quality across different ranking system. Some systems privilege *co-publications*, either with international partners or corporate ones. Others privilege non-bibliometric measures, such as research income, patents, etc and there are cases that measure research intensity by the centrality of graduate students to overall enrolments – e.g. the ratio of doctoral to undergraduate students.

Box 12: Research Quality Indicators, preferred options

As in CNFIS

- Research/creative impact
- Scholarly activity

Suggested modifications

- For the former, Use of the M-index instead of H-Index.

- For both, relieve individual institutions of the burden of data collection and analysis and compile the data centrally using one of the major international citation databases.

104. To some extent these measures are highly dependent on the field of study. As such, measuring them on an institutional basis, as most international rankings do, in many ways simply measures the breadth of an institution's program offerings. In a situation like Romania's, where ranking is to be done by field or branch of study rather than at the institutional level, comparisons can be done more validly, but at the same time, there is likely a need to tailor the design of the research measures – and possibly the weighting thereof – to the corresponding fundamental field or branch of science. For this purposes groups of experts from a variety of study fields have been hired both by the Ministry of Education and ARACIS to provide their inputs for these field-specific

indicators and work on the definition of weights for these and the rest of the indicators that will be used for the construction of the Ranking of study programs.

105. The three indicators of research quality that are currently in use in Romania are well defined and adequate for the purposes of measuring research quality. Moreover, they show a greater-than-average sensitivity to the difficulties of measuring research in a non-English-speaking country. Yet, the main potential sources of criticism are a somewhat idiosyncratic view of what constitutes a publication underpins the indicator that uses UEFISCID-inspired metrics rather than ones which would be used by international ranking systems and, relatedly, a reliance on institutions to collect and score data rather than direct use of major scientific databases. Also, with respect to the research/creative impact indicator, the use of the H-index biases results towards older researchers because of the career-cumulative nature of this score.

Table 5. Current CNFIS Supplementary Budget Research Indicators

Indicator	Description
Research/Creative Impact	Impact of scientific activity (based on the H-Index)/ or artistic creation (using measures of artistic and cultural impact used for artistic fields as measured in C.2.1)
Scholarly Activity	Scientific output over previous four years based on a scoring system for articles published (developed by UEFISCDI) and patents obtained; alternative scoring exists for athletic and artistic activities.
Research/Creative Income	Income over four previous years for scientific activity / artistic creation

106. While decisions about what type of research outputs are to be highlighted in the ranking system are to be taken by the counterparts and in consultation with key stakeholders, a few recommendations are presented for guidance purposes and for further discussion. These suggestions seek to stay in line with a perceived preference and legitimacy among different stakeholders in the Romanian higher education sector towards bibliometric approaches to measure research performance. At the same time, are based on CNFIS indicators but add some modifications to allow for improvements in the data gathering process and make the indicator less biased.

107. It is recommended, therefore, that the programmatic ranking continue to use the first two research indicators used by CNFIS and mentioned above. That is, research/creative impact and scholarly activity. However, two modifications should be considered. The first one regards the former indicator and is to replace the use of H-index by the M-index which is a time-limited H-index that removes this H-Index bias towards older researchers. The second modification is that for both indicators data should be collected by accessing international databases rather than by requesting universities to report it.

108. Another dimension at which the Ranking of study programmes should look is student satisfaction. This was a clear request from the counterparts in Romania and is in line with several cases of multi-dimensional rankings. Many of these ranking systems contain at least a few indicators based on student feedback and a few of them have them based on graduates'

feedback. These are sometimes referred to as "student satisfaction" indicators and the feedback provided along the lines of those indicators are often used to obtain a better understanding of the student learning environment. For instance, students are asked about the "quality of" (not "satisfaction with") teaching, student involvement in research, libraries, IT and laboratory equipment, or – if the student lives in some type of university-owned housing – of living arrangements. They may also be asked about questions relating to the availability of professors for student consultation, or the ease of making contacts/friendships with other students. It is possible to ask students to summarize all of these experiences into a single capstone indicator such as "overall satisfaction", but general practice is to get students to comment on individual aspects of their educational experience.

109. As an example, the German CHE tool has twelve specific indicators which are based on student feedback. Seven of these are about "academic studies and teaching" (level of contact with professors, quality of teacher support, breath of program offerings, etc), three are about quality of equipment/infrastructure (i.e. libraries, IT, rooms), and one each about job market preparation and support for study abroad. Technically, only one of these indicators are "satisfaction" questions (there is one question on "overall study situation"), but they all provide important contextual data about the student learning environment. The data on these indicators are turned into an index for the purposes of creating a single indicator.

110. Currently, there is no regular and standardised national student satisfaction study in place in Romania but in the short-term a brief survey to students or graduates could be used to gather information about students' satisfaction. Ideally, data on student satisfaction should be drawn from a specifically designed survey. Its development and implementation would be a necessary prerequisite for the gathering of regular data for this type of indicators. If these existed one idea could be to use only the results related to overall satisfaction of students and graduates and transfer it to the database of the Information Tool proposed here to then feed into the ranking index. Another option is to select several relevant indicators to be included in the dimension student satisfaction of the Ranking component.

Box 13: Student Satisfaction Indicators, preferred option

To use student surveys to collect data for the following indicators:

- Professors' level of contact with students
- Breadth of courses offered
- Organizational coherence of study program
- Support for students during entry phase
- Support from professors
- Overall satisfaction with study program
- Quality of IT infrastructure
- Quality of Libraries
- Quality of classrooms/study space/laboratories
- Support for Study Abroad
- Perceived preparation for job market

111. However, in the absence of that instrument, for the moment a brief survey to gather students' satisfaction with its program of studies could be designed specifically for the purposes of this Ranking. A well-tested instrument such as that used by CHE could be used as a guideline for the indicators that could be included in that survey. Hence, while the number of issues on which student feedback could be solicited is large and selecting which ones to include in a ranking properly requires some kind of public consultation, no specific questions or indicators will be recommended until views and suggestions are gathered in the consultation process. However, in line with the CHE survey, a several indicators could be considered and can be seen in Box 10.

112. In the case of students' satisfaction, Romania does not currently measure employment outcomes of graduates. This contrasts significantly with Bulgaria, where such indicators make up a significant portion of the aforementioned BURS, which obtains data by linking its national student database to national tax and social security databases (see Table 6).

113. However, similar databases exist in Romania. A national database of students, and hence of graduates, exists along with a national database of labour contracts. This means that in the medium-term similar data could easily be made available for a Romanian ranking system. Since both databases are relatively new, there are very few graduates who have been in the labor market long enough to provide useful data (in Bulgaria, data is portrayed for the past five years of graduates; in Romania, it is believe that only 2-3 years of graduate data are available). Yet, no agreement currently exists to link the two data sets, which are owned by two different Ministries. Obtaining such an agreement should be a priority for ARACIS and MoNE as without it, useful employability indicators will not be possible. And, as it will take some time to negotiate database access between MoNE and the Ministry of Labor and Social Justice, by the time these negotiations are complete, the databases should evolve to the point where they can generate useful data for the ranking of study program purposes.

Table 6. Current Employability Indicators in BURS

Indicator	Description
Unemployment Among Graduates	% of graduates who have been registered as unemployed in past 12 months. Obtained by linking admin data on graduates to National Social Security data
Applicability of Degree Required	% of those working on employment contracts who are in positions requiring a university education (based on occupation code)
Applicability of Degree in Chosen Profession Required	% of those working on employment contracts who are in positions requiring a university education (based on occupation code)
Contribution to Social Security System	% employed in formal sector, making social insurance contributions (emigrating students count against the institution)
Graduates Insurance Income	Avg insurance income (meaning income subject to national insurance) of graduates, linking admin data with National Social Security data
Graduates Taxable Income	Avg taxable income of graduates, linking admin data with National Social Security data

114. Provided the linkage with these existent databases can be made, then it should be possible to find data on each graduate's labor contract. These data include the industry and occupation in which the individual works, the number of hours on the contract (i.e. full-time vs. part-time), and the level of remuneration. While this is a significant amount of information, the problem lies with interpreting data absences. If a graduate is not in the database, there is no way to know if that person is unemployed, out of the labor market, out of the country, or simply self-employed and working as an entrepreneur. This makes it difficult to construct a true employment or unemployment rate for graduates on these bases.

Box 14: Employability Indicators, preferred option

Not to be included in the short-term

Two indicators could be included in the mid-term:

- percentage of domestically-employed graduates who are employed full-time
- median incomes of domestically-employed graduates.

115. Nevertheless, the absence of perfect data should not impede the use of indicators that are still likely to be valid and useful. Though capturing true employment rates is likely impossible, two other figures could be useful: (i) the percentage of domestically-employed graduates who are employed full-time, and (ii) the median incomes of domestically-employed graduates. Neither would be a perfect measure of labor market outcomes, mainly because of missing data on graduates working abroad, but assuming there is a rough correlation between graduates domestic and international success rates, which seems likely, the domestic data alone is enough to understand the *relative* success rates of different programs, and for purposes of ratings/rankings it is the relative performance that matters.

116. In view of these data availability constraints the recommendation for the short term is to proceed to publication of rankings without Employability Indicators. This is preferred for the moment because it will take time to develop the database linkages which allow accurate collection of this information. Yet, in the medium term, it will be possible to include in the rankings database information about the two indicators as explained above, one regarding graduates in full-time employment and the other on their median incomes.

About the Possible Uses of the Tool

117. Potential users of this Information Tool are universities themselves, students, policy makers, researchers, and employers. These are those for whom information about the profiles of universities, the categorization per university type, and the ranking of study programmes should be useful.

118. Several examples of how this Information Tool could be used by different stakeholders were provided throughout the paper. For instance, an employer may be interested in universities that have strong links with the region (*Profile*) and then could consult in which study programmes those selected universities perform better (*Ranking*) for recruitment purposes. Similarly, a prospective student may be interested in a university that performs well in a given study field (*Ranking*) and then would like to select a university that prioritises teaching (*Categorization*).

119. Universities' authorities and policy-makers could use the classification to identify gaps in their provision and the higher education system, respectively. For HEI the Tool could allow to visualise disconnects between their missions and actions and using the classification in combination with the *Ranking* component, the Tool can allow institutions to set out specific benchmarks in relation to comparable universities or specific areas of action. The dynamism that this data-driven form of classifying could also be key for policy makers and researchers as well, since as it is implemented throughout a number of years it could enable the identification of changes in the system and inform policy reformulation and design. One example of this is the possibility to develop measures aimed at aligning better the education provided in different types of institutions and the demands of the labour market.

120. Users could access the information available from this tool in different ways. For this purpose it will be necessary to decide up to what level of aggregation users will have access to. For instance, if they will be able to access only the results of the classification; if they will be able to combine in different ways the indicators of each of component and define how many options will be enabled; or if they will be allowed to access directly the database and even create their own indicators. The recommendations favoured here is to limit access to the level of indicators which then the users could combine for different purposes.

121. In addition to the interconnections among the components of this Information Tool in terms of shared used of indicators from the users' side, the tool is also expected to provide information in an interlinked manner. Hence, while with the *Ranking* component of this Information Tool users will be able to access information regarding the performance of each university in the different fields of study in which they are operational, the Information Tool as a whole will offer the possibility to see that information in relation to the distinctive characteristics of the institutions presented in the classifications components of the Tool – the *Categorization* and the *Profiles*.

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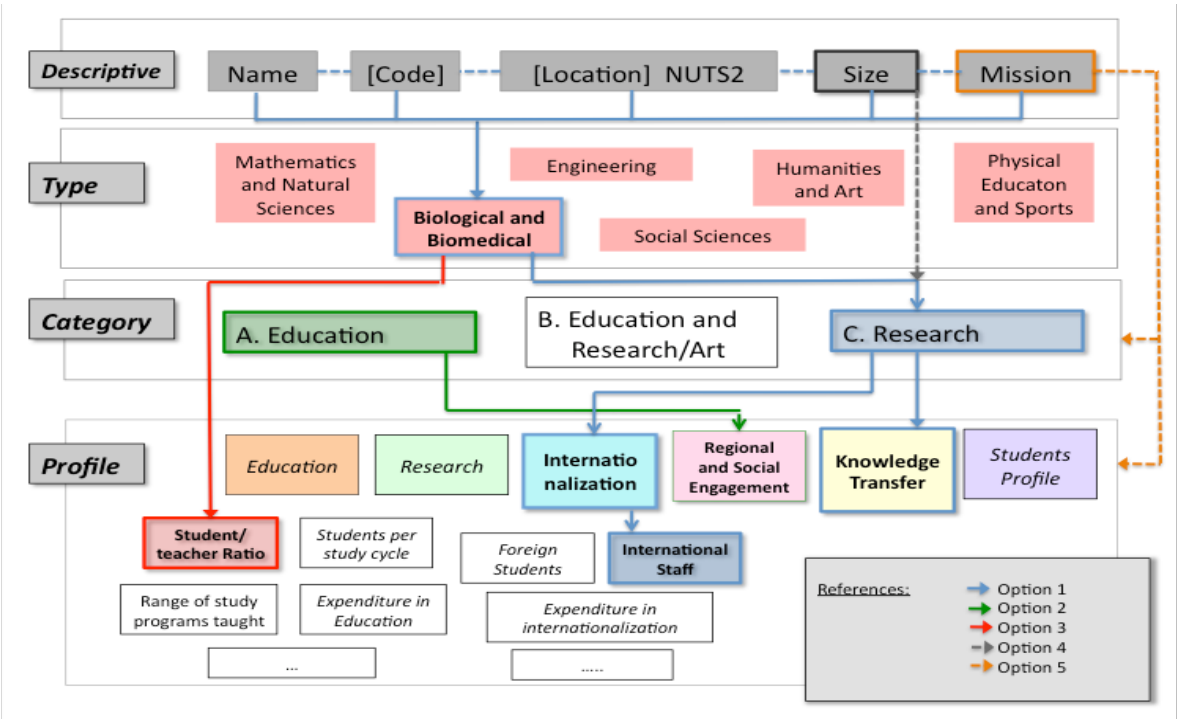
123. It is proposed here that two main entry points to access the tool are set out – one from study programmes and the other from a selected university. In the first case after accessing that type of university the user could then (i) see a list of universities for that type; (ii) these universities organised by their position in the three classes A, B, and C; (iii) the possibility of accessing information about the profile of universities of that selected type; (iv) a ranking of the universities within that type selected. The second entry point by university can also be reached at the second stage of the first entry point once a single university is selected. From a single selected university it could be possible to access information about (i) it class; (ii) ranking positions within its type; (iii) the option to access to all and each of the profile indicators.

124. Alternatively, the information tool could be made accessible from a wider number of entry points. These could include selecting, for instance, as the first search criteria one of the descriptive indicators, such as the size of the university, or an indicator from the profile component, such as the level of regional engagement. From this perspective, the tool could be made to work to answer a series of questions that could shape the information that could be obtain from the system. For instance, it would be possible to select type of universities, those focused on biological and biomedical sciences and combine it with those that are the most research focused, i.e. belonging to class C. Figure 3, below, illustrates this way in which the information tool could be used.

125. With regards to the Ranking component in particular, as with any indicator set, there are two ways to present and portray the data. Under a "user-defined" ranking system, data on each indicator is presented individually users are invited to draw their own conclusion from the information. Under a "pre-defined" or "league table" ranking, each indicator is assigned a weight by the ranker; institutional scores on each indicator are multiplied by the weighting, and these products are then summed to derive an overall score which forms the basis of an ordinal ranking. These two approaches are not mutually exclusive. A number of league table rankings also allow users to manipulate indicator data themselves so as to come up with their own user-defined ranking.

126. For the purposes of transparency, it is of great importance to at least allow users a "user-defined" option. If there is to be a "pre-defined" or "league-table" ranking, then the weightings should be the subject of a consultation process since such weightings are implicitly a kind of subjective definition of "quality," which requires wide buy-in to be useful. The WB takes no view with respect to such weightings.

Figure 4. An option for users' access to classification side of the Information Tool



Next Steps

127. The methodology and indicators proposed in this report as well as the first one (December 2017) will be consulted in multi-stakeholders' consultation sessions during late Spring 2018. The same group that are the potential users of this Information Tool are the stakeholders of the higher education system in Romania that are expected to continue participating in these public consultations. The public consultations are to be one-day long and held in universities located in different regions in Romania. This document contains some pending questions and a number of alternatives that could be discussed in that instance and

Table 7 below offers some initial ideas about how to organise the public consultation sessions around this proposed draft methodology.

Table 7. Suggested Plan for Public Consultation

9.30-10.30: Presentations	Key Contents
MoNE introduction	General purposes of the consultation; Organisation of the day; What we would like to have their views on
Ale's presentation	Rankings and classifications: introduction and differences
Romina's presentions	Classifications methodology: Progress made in terms of organising universities in "groups"; Updates on classing universities in A, B, C. Other indicators considered.
10.30-11.00 Coffee Break	
11.00-13.00: Work in groups	
Proposed activity: international cases in view of Romanian classification and ranking	
Objectives	*Work with international cases as a trigger for the emergence of general reflections on these methodologies, so to avoid a deep diving into indicators details for the morning* *Some points to follow in the discussion (more detailed questions can be developed):* *(1) Perceived differences with rankings and classifications with reference to international cases...* *(2) Questions about classifying as mapping and their purpose...* *(3) Purpose of classifying/ranking: transparency/information. Different users can benefit in different ways.* *(4) What is advanced research? Can this be interpreted as "focus" rather than "quality"? The meaning of the law...* *(5) Classification minimalist version (categorization), classification as "profile/mapping" (dimensions?)* *(6) How can rankings and classifications work together?*
Modality of work	*Small groups (from 3 to 6) of heterogeneous stake-holders. Someone in the group takes notes of key points discussed to be prepared for sharing at the end of session.* *Facilitators move around groups to moderate of necessary and take notes too. Final 30 minutes open discussion to share key points discussed in groups and and summary offered by faciliator.*
Material needed	*Summaries (fiches) of international cases and online access for each group.* *May be stakeholders they these cases but this is an opportunity to discuss them together and in view of this proposal.*
Lunch Break: 13.00-14.30	

14.30 – 15.30: Indicators - Presentations	Key Contents
Romina's presentation	Indicators of the draft proposed methodology: dimensions, details of indicators, justification (focus on fit for purpose - what do they measure? - as well as on feasibility/availability of data and verifiability) Presentation of a selection in details and show level of detail desired.
Alex's presentation	Possible indicators to consider for rankings in Romania. May be more of an open discussion to gather general preferences. Bring in at some point the issues of labour market and student surveys data. Issue of field-specific indicators.
Brief introduction of exercise next session	

15.30-16.00: Coffee break

16.00-17.30: Work in groups	
Proposed activity: creation of posters/use of post-its	
Objectives	*Identify new indicators and views about indicators currently under consideration in draft methodology. Focus on identify issues about data availability and perceived relevance of indicators. Think about general and field-specific indicators*
Modality of work	*Small groups (from 3 to 6) of heterogeneous stake-holders. Not organised by field, but to discuss field-specific indicators in the heterogeneous groups.* *Posters and post-its are used to create and develop indicators in all of its different aspects that need definition (justification, data sources, formulae, problems, etc)* *A guide consisting of a table with columns to fill in will be provided but the groups can decide to develop indicators with reference to different aspects also.* *Facilitators move around groups to moderate of necessary and take notes too.* *Final 30 minutes open discussion to share posters.* ***Someone from the MoNE may offer a final wrap-up summarising key points discussed in this session and in the morning in the final half hour of this session.***
Material needed	*Blank posters, markers, post-its, adhesive to stick posters to walls?* *Camera to take pictures of final posters!*

128. It is expected that a series of testing pilots will follow these public consultations. The feedback obtained during the public consultations will be integrated to that provided during the first stage of online consultations that took place in January and February 2018. Drawing on those feedbacks the methodology and indicators will be more thoroughly refined and possibly tested in a pilot. The pilots are expected to be held in the second half of 2018 and will be focused on selecting institutions of different sizes, field specialisations and conferring different levels of degrees.

129. The results of the pilots will lead to continued modifications in the methodology. On the bases of the feedback and lessons learned during the piloting phase, a final report will be delivered. That final report will include recommendations and a final proposal for the design and implementation of a methodology and indicators to classify universities and develop a ranking of study programs in Romania. Table 8 presents a timetable for the steps following the delivery of this draft methodology.

130. A multi-stakeholder consortium should conduct the final design and implementation of the methodology, where different perspectives can be considered. In this way the classification and ranking can gain in acceptance and effectiveness when implemented.

Table 8. Proposed Timetable

Activity	Time	Tentative dates
Revisions and comments on second draft methodology	May 2018	Return: end May 2018
Consultation with stakeholders	June 2018	June 11-15
Revision of consolidated draft methodology	July 2018	End July 15
Pilot with revised consolidated draft methodology	September-October 2018	TBC
Revision and preparation of final methodology	November	Deliverable: November 30

Annex I: Details of Indicators for *Profile* Component

The indicators and variables included in this annex are suggestions for discussion. They will be developed and refined in further consultations.

Dimension: Education						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
1.1	**Graduates per study cycle offered (BA | MA | PhD)**	*Indicates the profile and focus of the institution as well as the first layer of classification on the predominant field orientation* *Graduates are preferred to enrolments which avoids double counting students who stay over the regular period of study; Graduation data are generally more reliable than enrolment data* *Reflects National Tertiary Education Strategy's focus on attainment*	(a) Number of BA graduates (b) Number of MA graduates (c) Number of doctoral degrees awarded	Annual average	ANS/UEFISCDI	
1.2	**Range of study programs taught**	*Indicates the scope of the university's program offering*	Number of study programs	Total for reporting year	Universities ARACIS Nomenclature listings (BA and MA degrees)	
1.3	**Teacher/Student Ratio**	*Human resources dedicated to teaching students* *Ratio instead of absolute numbers of staff to compare institutions of different sizes, and to focus on what students receive from those dedicated resources* *It appears that ANS does not collect data for teaching staff per study cycle; As a result, the indicator proposes the total number per university*	(a) Total number of enrolled FTE students: budget and fee-paying; all BA and MA; part- and full-time; distance learning; evening (b) Total number of FTE teaching staff (permanent | fixed-term contracts)	Average of (a) and (b) for previous 4 or 5 years	ANS/UEFISCDI	

Dimension: Education						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
1.4	**Number of different types of teaching rooms**	*Indicates material resources in terms of infrastructure dedicated to teaching students* *The different types of teaching rooms include standard teaching rooms laboratories, workshops, design rooms, gyms (if sport university), as long as the room is used for teaching in regular courses*	(a) Total number of teaching rooms (b) Total number of enrolled students (see 1.3 above)	Most recent year	ANS	
1.5	**Revenues for education as a proportion of total university income**	*Relevance attributed to education over other university activities* *May be measured as a percentage of the budget from all sources; Clarification required on the treatment of salaries* *This indicator puts education in relation to research and "third mission" activities*	(a) Total university income (RON) (b) Total income (RON) from subsidies received via Ministry of National Education (Functional classification 423800) and students' fees (Functional classification 330500)	2-year average	National Reporting System (Forexebug)	
1.6	**Number of study rooms technologically equipped for teaching purposes per total number of teaching rooms**	*Indicates the level of ITC enhanced learning* *Rooms should count with at least one PC, AV system, and wifi access (see 1.4 above on what should be counted as teaching rooms)* *Aligns with National Tertiary Education Strategy regarding enhanced ICT*	(a) Number of study rooms with ≥1 PC, AV system, and wifi access (b) Total number of teaching rooms	At reporting date	TBD - ANS data on universities' material basis	Site visits
1.7	**Use of online teaching and grading resources (including anti-plagiarism software)**	*Indicates the level of ITC enhanced learning* *How can this be measured?* *Departments or programs that count with the software?* *Or actual usage?*	TBD	TBD	Universities	TBD

Dimension: Research						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
2.1	**Number of publications by all academic staff**	*Level of research activity in the institution* *Staff: both permanent and fix-term contracted academic* *Publications: including articles published in national and international journals and books and chapters* *Analyzes activity, not quality*	(a) Number of indexed publications authored by academic staff employed by the institution (b) Total number of FTE academic staff: teaching | research; permanent | fixed-term contracts	Total accumulated in previous 4 or 5 years	Citation indices accessible via Web of Science (better than Scopus to link publication with author/institution and similar coverage presently in terms of languages)	Information available online
2.2	**Ratio of publications per research and teaching staff**	*The level of research activity in relation to the size of its staff (see 2.1 above)* *While the volume disregarding the size of the institution can mean more repercussion of the research produced by that institution, the level of research activity in the relation to the number of staff reveals an institution profile*	(a) Number of publications authored by academic staff employed by the institution (b) Total number of academic staff (see 2.1 above for more details)	Total accumulated in previous 4 or 5 years	Citation indices accessible via Web of Science (better than Scopus to link publication with author/institution and similar coverage presently in terms of languages)	Information available online
2.3	**Ratio of professional and commercial publications per research and teaching staff**	*It seeks to include publications that reflect research activity but are disseminated via less academic channels that may be more relevant to the specific discipline* *This can be of relevance to show activity of both research and artistic oriented institutions. (N.B. This is important regarding the definition of class B universities in Romanian National Education Law 1)*	(a) Number of professional and commercial publications bibliographically traceable and officially catalogued	Total accumulated in previous 4 or 5 years	ANS or Universities	Bibliographical searches

Dimension: Research						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
		The publications need to bibliographically traceable and officially catalogued *They may include art exhibition catalogues, proceedings, reports, design specifications, among others* *This indicator does not count "artistic creations" (see 2.4 below)* *Per number of staff to normalize the indicator by each institution's size and align with indicator 2.2 (see above)*	(b) Total number of academic staff (see 2.1 above for more details)			
2.4	**Number of cultural and artistic events organized by the university's academic staff**	*University's level of artistic production* *Indicator includes exhibitions, concerts, performance in arts, and architecture* *Organized or co-organized officially by the university and open to the general public* *U-Map explains that this is a generally accepted indicator of the level of activities in arts and architecture*	Number of cultural and artistic events (exhibitions, concerts, performances) open to the general public organized by the university's academic staff and officially endorsed by the university	Total accumulated in previous 4 or 5 years	Universities	Public events Procurement processes Invoices
2.5	**Income from research grants and projects as a proportion of the total university income**	*Importance of research activity in the university finances* *Indicator measured as a percentage; It should include grants and projects from national and international as well as private, public, and not-for-profit funders*	(a) Total funds from research grants and projects (RON) (b) Total university income (RON)	Averages of (a) and (b) for the previous 2 years	National Reporting System (Forexebug)	Balance sheets Universities' financial statements
2.6	**Expenditure in research as a proportion of the total university expenses**	*Involvement and interest in research* *Indicator measured as a percentage based on expenditures reported in the university internal financial records and collected by ANS; In the case of medical schools with attached hospitals expenditure on R&D in hospitals should be included but on patient care at hospitals should be excluded*	(a) Total university expenses (RON) (b) Expenditure (regardless of the source) for research activities (RON)	2 years	National Reporting System (Forexebug)	University's internal financial records

Dimension: Research						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
2.7	**Access to online databases and journals**	*Indicates a commitment to facilitate research and being up-to-date with the use of ICT for research purposes* *Focuses on the number of journals and databases (national and international) for which the university has subscriptions that allow online access*	(a) Number of journal subscriptions for online access (b) Number of database subscriptions for online access	At reporting date	University libraries	Subscription invoices

Dimension: Internationalization						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
3.1	**Proportion of international students enrolled in any study cycle relative to total number of students enrolled**	*Indicates both an international richness of the institutions and an assumed perception on the part of the students who enroll of an institution welcoming international students; It excludes exchange students and those in non-degree granting courses* *International students are those holding foreign degrees at entrance, disregarding their citizenship* *Holding a foreign degree is a sign of having been educated in a different system and culture; Foreign nationals may have been educated in Romania*	(a) Number of students that held a degree granted by a foreign education institution at entrance (b) Total number of students (see 1.3 for more details)	Average for previous 4 or 5 years	ANS [N.B. It appears that there are no records for students with foreign degrees on entrance. There is however information on citizenship of students, including per study cycle. This could be used as an alternative for (a)]	N/A
3.2	**Proportion of incoming exchange students in relation to total number of students enrolled**	*Inward student mobility may reflect a perception of an internationally oriented institution, as well as the presence of exchange students strengthens that orientation* *Not a ratio between incoming and outgoing since the focus is on incoming students; While outgoing students may*	(a) Number of exchange students at any study cycle in the framework of any international agreement, including Erasmus (headcount)	Average for previous 4 or 5 years	National Agency of European Programs for Education and Professional Development (ANPCDFP)	

Dimension: Internationalization						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
		bring international perspectives to the institution, outgoing students do not reflect any assumption of a perception of the institution as internationally oriented; Moreover, while outgoing students are mostly educated in-country, incoming students have been mostly educated in a foreign system and cultural context	(b) Total number of students enrolled (see 1.3 for more details, but here headcount)		TBD-ANS	
3.3	**Proportion of outgoing exchange students in relation to total number of enrolled students**	*Outward student mobility may reflect perceptions about the Romanian higher education system compared to those of other European countries, and student preferences to seek external academic opportunities*	(a) Number of Romanian students abroad at any study cycle in the framework of any international agreement, including Erasmus (headcount)	Average for previous 4 or 5 years	National Agency of European Programs for Education and Professional Development (ANPCDFP)	
			(b) Total number of students enrolled (see 1.3 for more details, but here headcount)		TBD-ANS	
3.4	**Proportion of academic staff with foreign nationalities and/or degrees in relation to total number of academic staff**	*Indicates the international profile of academic staff* *Academic staff comprises research and teaching staff (both permanent and fixed-term contracts)*	(a) Numbers of academic staff with foreign nationality	Average for previous 4 or 5 years	ANS collects citizenship data of teaching staff (unclear if citizenship data is also collected for research staff)	
			(b) Number of academic staff with degrees from foreign universities			
			(c) Total number of academic staff (see 2.1 for more details)			
3.5	**Expenditure in activities to promote and support the international profile of the university as a proportion of the total university expenses**	*Importance given to acquire and maintain and international profile*	(a) Total expenditure on activities and resources to promoting and support internationalization (RON)	Average for previous 4 or 5 years	ANS	University's financial records
			(b) Total university expenses (RON)			

Dimension: Internationalization						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
3.6	**Proportion of institutional web and social media pages available in English and other non-official Romanian languages**	*Indicates a commitment to reach and attract international audiences (students, researchers, among others)* *While considering courses offered in non-official Romanian languages may overlook an important level of internationalization in universities that offer course in minority languages in Romania, the use of non-official Romanian languages in the webpages can be assumed, due to the global reach of the internet, to be guided by the aiming of reaching international audiences rather than national minorities*	(a) Number of pages in English and other non-official Romanian languages in all university websites and social media (b) Total number of pages in institutional websites and social media	At reporting date	Universities	Public webpages

Dimension: Regional & Social Development						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
4.1	**Ratio of graduates coming from SE disadvantaged backgrounds, and total number of graduates**	*Indicates the university's commitment and ability to improve tertiary education attainment levels of the most disadvantaged social sectors.* *Includes both total and per study cycles offered (BA | MA | PhD)* *Definition of SE disadvantaged draws from Romanian legal definition; Attainment rather than enrolment because reflects full*	(a) Graduates from SE disadvantaged sectors	Averages for the previous 4 or 5 years Note (from CNFIS Financing methodology) Only in 2021 the data will	CNFIS (directly from universities)	

Dimension: Regional & Social Development						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
		commitment of university with socially disadvantaged sectors *Over time, a ratio can offer a better idea of progress made than absolute numbers* *Aligns with main action areas of National Tertiary Education Strategy*	(b) Total number of graduates	be an average of the previous four years for all four components of the legal definition of SE disadvantaged		
4.2	**Proportion of enrolments from the region where the university is located: total and per study cycle**	*Indicates the strength of the connection of the university with the region where it is located* *Measured as a percentage* *Definition of region to be based on Eurostat's NUTS2 and belonging to the region for both university and students to be defined according to their registered addresses*	(a) Addresses of students enrolled in each study cycle (b) University's address (c) NUTS2 reference to define region of university and students' addresses (d) Total number of enrolments per study cycle (see 1.3 for more details)	TBD	RMU	
4.3	**Number of students with general scholarships and of those with needs-based scholarships, both as a proportion of total number of**	*Indicates the promotion of excellence and commitment to enable higher levels of tertiary education attainment of SE disadvantaged sectors; Measured through scholarship data and other forms of financial support funded using university resources*	(a) Number of students with scholarships financed by the university: total and per study cycle	Averages of the previous 4 or 5 years	TBD The General Directorate of Budget of the Ministry of National Education has information about	

Dimension: Regional & Social Development						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
	students enrolled: total and per study cycle	*Since the duration of scholarships may vary and a scholarship may be received multiple times by a student, the count should be per student that has at least obtained one scholarship, not accumulated scholarships* *If scholarships are not needs-based this indicator does not reflect commitment with the inclusion of SE disadvantaged sectors but reflect focus on merit* *Distinguishing between need-based scholarships and general scholarships accounts for efforts to include especially economically disadvantaged sectors, which are not necessarily accounted for in indicator 4.1 (which uses legal definition of SE disadvantaged sectors)* *Based only on university sources so it reflects university priorities and not simply students' profiles* *(N.B. Counting the number of students rather than total university dedicated funds gives also an indication of how widely or not this university intentions have benefitted students)*	(b) Number of students with need-based scholarships or other forms of financial support from the university: total and per study cycle (c) Number of students enrolled: total and per study cycle (see 1.3 for more details)		university funds contributing to scholarship fund (CNFIS methodology)	

Dimension: Regional & Social Development						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
4.4	**Expenditure in activities supporting institutional engagement with community as a proportion of total university expenses**	*Indicates the priority (and consideration) given to this dimension of the third mission of the university; Activities may vary in different institutions but should be accounted for in internal financial records as aimed at enhancing the university's engagement with the community* *The community is broadly defined, it concerns the general public beyond the university (so not just students, teachers, researchers, and its administrative staff) but it can refer to the local, regional or national level as well as to specific sectors of the population such as children, ethnic minorities; It excludes, however, the for-profit sector as this is included in the knowledge transfer dimension* *Disregarding the nature and characteristic of the specific activities, recording the expenditure as aimed at enhancing the links of the university with the community already denotes an intention to take into account this dimension of the third mission of the university*	(a) Expenditure of the university recorded as dedicated to supporting institutional engagement with the community (RON) (b) Total university expenses (RON)	Average of the previous 4 or 5 years	Universities TBD	
4.5	**Accessibility of institutional webpage, according to international standards**	*Indicates the interest of the institution in enabling access to people with disabilities* *Level of compliance with the WorldWideWeb Consortium guidelines. It is measured in "grades" (e.g. a, aa, aaa)* *It is based on internationally developed and used guidelines*	TBD	At reporting date	Universities	Public webpages

Dimension: Knowledge Transfer						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
5.1	**Patents granted per total number of academic staff**	*Output transferring knowledge generated at the university and demonstrating innovative character of the institution based on patents awarded (not filed) to measure realized output* *Normalized per size of staff to make institutions of different sizes comparable*	(a) Number of patents (b) Total number of academic staff (see 2.1 for more details)	Accumulated in previous 4 or 5 years	ANS	Public registers
5.2	**Number of new enterprises (spin-offs and start-ups) per total number of academic staff**	*Output transferring knowledge generated at the university and demonstrating innovative character of institution. It also shows entrepreneurship trait of the institution* *Define the difference between start-ups and spin offs clearly in accordance with national regulations*	(a) Number of start-ups (b) Number of spin-offs (c) Total number of academic staff (see 2.1 for more details)	Accumulated in previous 4 or 5 years	Universities	Registers of new companies and information about the university's share, divestment, leasing, selling or transferring of its rights to companies
5.3	**Income generated for the university from patents, licenses, copyrights, new enterprises, and contracted advisory work**	*Includes income generated from contracts of academic staff in consultancy work for the private, public, and non-governmental sector that is not otherwise taken into account in this dimension (difficult to account for if not by reference to amount of money it represents)* *It excludes funds for research projects and grants from the private sector (see indicator 2.3)*	(a) Income generated from patents (RON) (b) Income generated from licenses (RON) (c) Income generated from copyrights (RON) (d) Income generated from start-ups (RON) (e) Income generated from spin-offs (RON) (f) Income generated from contracted advisory work (RON)	Average of the total for previous 4 or 5 years	TBD	

Dimension: Knowledge Transfer						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
5.4	**Expenditure in knowledge transfer activities as a proportion of total university expenses**	*Reflects the intention of the university to focus on these activities* *The expenditure takes into account funds made available by the university take into account external funding given/obtained for these purposes*	(a) Expenditure recorded as dedicated to knowledge transfer activities (RON) (b) Total university expenses (RON)	Average of the total for previous 4 or 5 years	Universities	University's financial records
5.5	**Presence in traditional and social media by staff relating knowledge generated at the institution and transfer processes between university and society**	*Involvement in social debate to disseminate knowledge produced in the university and outputs generated in its bases*	Number of platforms in traditional and social media to refer to knowledge transfer activities, outputs and inputs	Previous 4 or 5 years	Universities	Various recordings

Dimension: Student Profiles						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
6.1	**Students enrolled in different modes of study (full-time, part-time, distance learning, and evening) as a proportion of total number of students enrolled**	*Different predominant types of student enrolment indicate different attitudes of the institution towards the needs of students* *Measured as a percentage, this methodology adopts an approach focused on describing what the university does; This is a crucial indicator of the types of students the university caters toward*	(a) Number of students enrolled full-time (b) Number of students enrolled part-time (c) Number of students enrolled in distance learning modalities (d) Number of students enrolled in evening programs (e) Total student enrolment (see indicator 1.3 for more details)	Average for previous 4 or 5 years	ANS	

Dimension: Student Profiles						
No.	**Indicator**	**Scope**	**Variables**	**Coverage**	**Source**	**Audit**
6.2	**Students enrolled in first year by age for BA and MA level studies**	*Indicates what the university does to cater to different types of students Taking first year enrolments avoids counting students going beyond regular study period and thus presence of mature students (+30) may indicate lifelong learning* *A high proportion of master's level mature students may indicate a more professional orientation and catering for students with previous work experience*	(a) Date of birth of students enrolled in first year in BA studies (b) Date of birth of students enrolled in first year in MA studies	Average for previous 4 or 5 years	ANS	
6.3	**Proportion of fee-paying students in relation to state-funded students**					
6.4	**Average fee costs per year, at BA and MA levels**	*Key information for students about the university's fee levels*	Average fees considering all study programs offered at BA and MA levels (RON)	At reporting date	ANS	
6.5	**Proportion of total university budget that comes from fee payments**	*Dependence of university on fee-payments*	(a) Total income from fee-payments (RON) (b) Total university budget (RON)	Average for previous 4 or 5 years	ANS	
6.6	**Number of students who use online facilities provided by the university to enroll and pay fees as a proportion of those who do these in other ways**	*Indicates the level of digitization of university services to students and their usability for the students* *Measured as a percentage and includes only fee-paying students, not budget-places; This indicator should be considered to compare with those who pay online*	(a) Number of students who enroll online in one year (b) Number of students who pay fees online (c) Number of fee-paying students (d) Total number of enrolments (annual)	Averages for previous 4 or 5 years	Universities	

Annex II: Algorithms and Formulae for a selection of *Profile* Indicators

Note: The indicators and variables included in this annex are suggestions for discussion. They will be developed and refined in further consultations. For each dimension, the number of reporting years (n) is also subject to discussion.

Dimension 1: Education

Indicators selected: **1.1, 1.2, 1.3, 1.4, 1.5, 1.6**

Indicator excluded: **1.7**

1.1 $Average\ number\ of\ graduates\ per\ study\ cycle\ offered$

$$n = Number\ of\ reporting\ years$$

$$BA = Number\ of\ BA\ graduates\ in\ the\ reporting\ year$$

$$MA = Number\ of\ MA\ graduates\ in\ the\ reporting\ year$$

$$PhD = Number\ of\ PhD\ graduates\ in\ the\ reporting\ year$$

(i) Average number of BA graduates

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} BA_i$$

(ii) Average number of MA graduates

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} MA_i$$

(iii) Average number of PhD graduates

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} PhD_i$$

1.2 $Range\ of\ study\ programs\ taught$

$$Calculation: P_n = Number\ of\ study\ programs\ in\ the\ reporting\ year$$
$$n = Number\ of\ reporting\ years$$

1.3 $\frac{Teacher}{Student}\ Ratio$

$$Calculation: \frac{Teacher_{FTE}}{Student_{FTE}}\ \ where$$

$$Teacher_{FTE} = Number\ of\ FTE\ teaching\ staff\ (all\ contracts)$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

1.4 $Number\ of\ different\ types\ of\ teaching\ rooms$

$$Calculation: \frac{Rooms_{Teach}}{Student_{FTE}}\quad where$$

$$Rooms_{Teach} = Number\ of\ teaching\ rooms$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

1.5 $Revenues\ for\ education\ as\ a\ proportion\ of\ total\ university\ income$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} IncomeEdu\%_i\ \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$IncomeEdu\% = \frac{IncomeEdu}{Income_{ALL}} \times 100$$

$$IncomeEdu = \ Income_{SUBS} + \ Income_{FEES}$$

$$Income_{ALL} = Total\ University\ Income\ (RON)$$

1.6 $Number\ of\ study\ rooms\ technologically\ equipped\ for\ teaching\ purposes\ per\ total\ number\ of\ teaching\ rooms$

$$Calculation: \quad \frac{Rooms_{ITStudy}}{Rooms_{Teach}}\quad where$$

$$Rooms_{ITStudy} = Number\ of\ study\ rooms\ with \geq 1\ PC, AV\ System, and\ wifi\ access$$

$$Rooms_{Teach} = Number\ of\ teaching\ rooms$$

Dimension 2: Research

Indicators selected: **2.1, 2.2, 2.3, 2.4, 2.5, 2.6, and 2.7**

Indicator excluded: None

2.1 $Number\ of\ publications\ by\ all\ (FTE)\ academic\ staff$

$$Calculation:\ Index_{Pub} = \sum_{i=1}^{n} Pub_i\ where$$

$$n = \ Number\ of\ reporting\ years$$

$$Pub = \\ Number\ of\ indexed\ publications\ authored\ by\ employed\ academic\ staff\ in\ reporting\ year$$

2.2 $Ratio\ of\ publications\ per\ research\ and\ teaching\ staff\ for\ a\ given\ period$

$$Calculation:\ \frac{1}{n}\sum_{i=1}^{n} IndexRatio_i\ where$$

$$IndexRatio = \frac{Index_{Pub}}{Staff_{FTE}}\ in\ the\ reporting\ year$$

$$n = \ Number\ of\ reporting\ years$$

$$Staff_{FTE} = Total\ number\ of\ FTE\ academic\ staff\ (all\ contracts)$$

N.B. $Staff_{FTE}$ includes teaching and research staff (who are employed on permanent and fixed-term contracts)

2.3

$Ratio\ of\ professional\ and\ commercial\ publications\ per\ research\ and\ teaching\ staff$

$$Calculation:\ \frac{Index_{trace}}{Staff_{FTE}}\ \ where$$

$$Index_{trace} = \sum_{i=1}^{n} Pub_{trace}$$

$$n = \ Number\ of\ reporting\ years$$

$$Pub_{trace} = \\ Number\ of\ professional\ and\ commercial\ publications\ bibliographically\ traceable\ and\ officially\ catalogued\ in\ reporting\ year$$

$$Staff_{FTE} = Total\ number\ of\ FTE\ academic\ staff\ (all\ contracts)$$

N.B. $Staff_{FTE}$ includes teaching and research staff (who are employed on permanent and fixed-term contracts)

2.4 $Number\ of\ cultural\ and\ artistic\ events\ organized\ by\ the\ university's\ academic\ staff$

$$Calculation: \sum_{i=1}^{n} Arts \qquad where$$
$$n = Number\ of\ reporting\ years$$

$$Arts =$$
$$Number\ of\ cultural\ and\ artistic\ events\ open\ to\ the\ general\ public\ organized\ by\ the\ university's\ academic\ staff\ and\ officially\ endorsed\ by\ the\ university$$

2.5

$Income\ from\ research\ grants\ and\ projects\ as\ a\ proportion\ of\ total\ university\ income$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} IncomeResearch\%_i \quad where$$
$$n = Number\ of\ reporting\ years$$
$$IncomeResearch\% = \frac{IncomeResearch}{Income_{ALL}} \times 100$$
$$IncomeResearch = Income_{GRANTS} + Income_{PROJECTS}$$
$$Income_{ALL} = Total\ University\ Income\ (RON)$$

2.6 $Expenditure\ in\ research\ as\ a\ proportion\ of\ total\ university\ expenses$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} Research\%_i \ where$$
$$n = Number\ of\ reporting\ years$$
$$Research\% = \frac{Research}{Expenditure_{ALL}} \times 100$$

$$Research = \ Expenditure\ on\ research\ activities\ (RON)$$

$$Expenditure_{ALL} = Total\ University\ Expenditure\ (RON)$$

2.7 $Access\ to\ online\ databases\ and\ journals$

$$Calculation:\ \ Access \qquad where$$

$$Access = \ Online_{Journals} + Online_{Databases}$$

$$Online_{Journals} = Number\ of\ journal\ subscriptions\ for\ online\ access$$

$$Online_{Databases} = Number\ of\ database\ subscriptions\ for\ online\ access$$

Dimension 3: Internationalization

Indicator selected: **3.1, 3.2, 3.3, 3.4, 3.5, and 3.6**

Indicator excluded: None

3.1

$Proportion\ of\ international\ students\ enrolled\ in\ any\ study\ cycle\ relative\ to\ total\ number\ of\ enrolled\ students$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentIntl_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$StudentIntl = \frac{Student_{INTL}}{Student_{INTLFTE}} \times 100$$

$$Student_{INTLFTE} =$$

$$Number\ of\ enrolled\ FTE\ students\ who\ hold\ a\ degree\ granted\ by\ a\ foriegn\ HEI\ (all\ cycles)$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

3.2 $Proportion\ of\ incoming\ exchange\ students\ in\ relation\ to\ total\ number\ of\ enrolled\ students$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentIncoming_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$StudentIncoming = \frac{Student_{INEXCHANGE}}{Student_{FTE}} \times 100$$

$$Student_{INEXCHANGE} =$$

$$Number\ of\ exchange\ students\ at\ any\ study\ cycle\ in\ the\ framework\ of\ any\ international\ agreement\ including\ ERASMUS$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

3.3 $Proportion\ of\ outgoing\ exchange\ students\ in\ relation\ to\ total\ number\ of\ enrolled\ students$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentOutgoing_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$StudentOutgoing = \frac{Student_{OUTEXCHANGE}}{Student_{FTE}} \times 100$$

$$Student_{OUTEXCHANGE} =$$

$$Number\ of\ Romanian\ students\ abroad\ at\ any\ study\ cycle\ in\ the\ framework\ of\ any\ international\ agreement\ including\ ERASMUS$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

3.4 $Proportion\ of\ academic\ staff\ with\ foreign\ nationalities\ and\ (or)\ degrees\ in\ relation\ to\ total\ number\ of\ academic\ staff$

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StaffIntl\%_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$StaffIntl\% = \frac{StaffIntl}{Staff} \times 100$$

$$StaffIntl = Staff_{FOREIGNROM} + Staff_{FOREIGNFOR} + Staff_{ROMFOR}$$

$$Staff_{FOREIGNROM} = \\ Number\ of\ academic\ staff\ with\ foreign\ nationality\ and\ one\ Romanian\ degree$$

$$Staff_{FOREIGNFOR} = \\ Number\ of\ academic\ staff\ with\ foreign\ nationality\ and\ all\ foreign\ degrees$$

$$Staff_{ROMFOR} \\ = Number\ of\ academic\ staff\ with\ Romanian\ nationality\ and\ foreign\ degree(s)$$

$$Staff = Total\ number\ of\ academic\ staff\ (all\ contracts)$$

3.5

Expenditure in activities to promote and support the international profile of the university as a proportion of the total university expenses

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} International\%_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$International\% = \frac{International}{Expenditure_{ALL}} \times 100$$

$$International = \\ Expenditure\ on\ activities\ and\ resources\ to\ promote\ and\ support\ internationalization\ (RON)$$

$$Expenditure_{ALL} = Total\ University\ Expenditure\ (RON)$$

3.6 $Proportion\ of\ institutional\ web\ and\ social\ media\ pages\ available\ in\ English\ and\ other\ non-official\ Romanian\ languages$

$$Calculation: \quad Web\%_{NONROM} \quad where$$

$$Web\%_{NONROM} = \frac{Web_{NONROM}}{Web_{ALL}} \times 100$$

$$Web_{NONROM} = Number\ of\ pages\ in\ English\ and\ other\ non-official\ Romanian\ languages\ in\ all\ university\ websites\ and\ social\ media$$

$$Web_{ALL} = Total\ number\ of\ pages\ in\ institutional\ websites\ and\ social\ media$$

Dimension 4: Regional and Social Development

Indicators selected: **4.1, 4.2, 4.3, and 4.4**

Indicators excluded: **4.5**

4.1 $Ratio\ of\ graduates\ of\ disadvantaged\ socio-economic\ background$

$$Calculation: \frac{Graduates_{SE}}{Graduates_{ALL}}$$

$$n = Number\ of\ reporting\ years$$

$$Graduates_{SE} = Number\ of\ graduates\ of\ disadvantaged\ socio-economic\ backgrounds\ (all\ cycles)$$

$$Graduates_{ALL} = Total\ number\ of\ graduates\ (all\ cycles)$$

4.2 $Proportion\ of\ enrolments\ from\ the\ region\ where\ the\ university\ is\ located\ [total\ and\ per\ cycle]$

All Study Cycles

$$Calculation: \frac{Student_{Local}}{Student_{FTE}} where$$

$$Student_{Local} = Student_{LocalBA} + Student_{LocalMA} + Student_{LocalPhD}$$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

Per Study Cycle

BA Cycle:

$$Calculation: \frac{Student_{LocalBA}}{Student_{FTEBA}} where$$

$Student_{LocalBA}$
$= Number\ of\ BA\ students\ enrolled\ from\ the\ region\ where\ university\ is\ located$

$$Student_{FTEBA} = Number\ of\ enrolled\ FTE\ students\ in\ BA\ programs$$

MA Cycle:

$$Calculation: \frac{Student_{LocalMA}}{Student_{FTEMA}} where$$

$Student_{LocalMA}$
$= Number\ of\ MA\ students\ enrolled\ from\ the\ region\ where\ university\ is\ located$

$$Student_{FTEMA} = Number\ of\ enrolled\ FTE\ students\ in\ MA\ programs$$

PhD Cycle:

$$Calculation: \frac{Student_{LocalPhD}}{Student_{FTEPhD}} where$$

$Student_{LocalPhD}$
$= Number\ of\ PhD\ students\ enrolled\ from\ the\ region\ where\ university\ is\ located$

$$Student_{FTEPhD} = Number\ of\ enrolled\ FTE\ students\ in\ PhD\ programs$$

4.4 $Number\ of\ students\ with\ scholarships\ as\ a\ proportion\ of\ total$

$$number\ of\ enrolled\ students$$

All Study Cycles

$$Calculation\colon \frac{1}{n}\sum_{i=1}^{n} StudentAid_i\ where$$

$$n = Number\ of\ reporting\ years$$

$$StudentAid = \frac{Student_{AID}}{Student_{FTE}}$$

$$Student_{AID} = Student_{NEED} + Student_{GENERAL}$$

$$Student_{NEED} = Student_{NEEDBA} + Student_{NEEDMA} + Student_{NEEDPhD}$$

$Student_{NEEDBA}$
$= Number\ of\ enrolled\ BA\ students\ with\ need\ based\ scholarships\ in\ a\ given\ year$

$Student_{NEEDMA}$
$= Number\ of\ enrolled\ MA\ students\ with\ need\ based\ scholarships\ in\ a\ given\ year$

$Student_{NEEDPhD}$
$= Number\ of\ enrolled\ PhD\ students\ with\ need\ based\ scholarships\ in\ a\ given\ year$

$Student_{GENERAL}$
$= Student_{GENERALBA} + Student_{GENERALMA} + Student_{GENERALPhD}$

$Student_{GENERALBA}$
$= Number\ of\ enrolled\ BA\ students\ with\ general\ scholarships\ in\ a\ given\ year$

$Student_{GENERALMA}$
$= Number\ of\ enrolled\ MA\ students\ with\ general\ scholarships\ in\ a\ given\ year$

$Student_{GENERALPhD}$
$= Number\ of\ enrolled\ PhD\ students\ with\ general\ scholarships\ in\ a\ given\ year$

$$Student_{FTE} = Number\ of\ enrolled\ FTE\ students\ (all\ cycles)$$

Per Study Cycle:

BA Cycle:

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentAidBA_i \ where$$

$$StudentAidBA = \frac{Student_{AIDBA}}{Student_{FTEBA}}$$

$$Student_{AIDBA} = Student_{NEEDBA} + Student_{GENERALBA}$$

$$Student_{FTEBA} = Number\ of\ enrolled\ FTE\ students\ in\ BA\ programs$$

MA Cycle:

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentAidMA_i \ where$$

$$StudentAidMA = \frac{Student_{AIDMA}}{Student_{FTEMA}}$$

$$Student_{AIDMA} = Student_{NEEDMA} + Student_{GENERALMA}$$

$$Student_{FTEMA} = Number\ of\ enrolled\ FTE\ students\ in\ MA\ programs$$

PhD Cycle:

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentAidPhD_i \ where$$

$$StudentAidPhD = \frac{Student_{AIDPhD}}{Student_{FTEPhD}}$$

$$Student_{AIDPhD} = Student_{NEEDPhD} + Student_{GENERALPhD}$$

$$Student_{FTEPhD} = Number\ of\ enrolled\ FTE\ students\ in\ PhD\ programs$$

4.4 *Expenditure in activities supporting institutional engagement with community as a proportion of total university expenses*

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} Community\%_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$Community\% = \frac{CommunityEngage}{Expenditure_{ALL}} \times 100$$

$$CommunityEngage =$$

$$Expenditure\ of\ the\ university\ dedicated\ to\ supporting\ institutional\ engagement\ with\ the\ community\ (RON)$$

$$Expenditure_{ALL} = Total\ University\ Expenditure\ (RON)$$

Dimension 5: Knowledge Transfer

Indicators selected: **5.1, 5.2, 5.3, 5.4, and 5.5**

Indicators excluded: None

5.1 $Patents\ granted\ per\ total\ number\ of\ academic\ staff$

$$Calculation: \frac{Patent_{ALL}}{Staff_{FTE}} \ where$$

$$Patent_{ALL} = \sum_{i=1}^{n} Patent_i$$

$$n = \ Number\ of\ reporting\ years$$

$$Patent = \ Number\ of\ patents$$

$$Staff_{FTE} = Total\ number\ of\ FTE\ academic\ staff\ (all\ contracts)$$

5.2 $New\ enterprises: start-ups\ and\ spin-offs\ per\ total\ number\ of\ academic\ staff$

$$Calculation: \frac{Enterprises_{ALL}}{Staff_{FTE}} \ where$$

$$Enterprises_{ALL} = \ Starts_{ALL} + Spins$$

$$Starts_{ALL} = \sum_{i=1}^{n} Starts_i$$

$$n = \text{Number of reporting years}$$

$$Starts = \text{Number of start-ups}$$

$$Spins_{ALL} = \sum_{i=1}^{n} Spins_i$$

$$Spins = \text{Number of spin-offs}$$

$$Staff_{FTE} = \text{Total number of FTE academic staff (all contracts)}$$

5.3 *Income generated for the university from patents, licenses, copyrights, new enterprises, and contracted advisory services (RON)*

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} Income_i \text{ where}$$

$$n = \text{Number of reporting years}$$

$$Income = Income_p + Income_l + Income_c + Income_{st} + Income_{sp} + Income_{as}$$

$$Income_p = \text{Income generated from patents}$$

$$Income_l = \text{Income generated from licenses}$$

$$Income_c = \text{Income generated from copyrights}$$

$$Income_{st} = \text{Income generated from start-ups}$$

$$Income_{sp} = \text{Income generated from spin-offs}$$

$$Income_{as} = \text{Income generated from advisory services}$$

5.4 *Expenditure in knowledge transfer activities as a proportion of total university activities*

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} Knowledge\%_i \text{ where}$$

$$n = \text{Number of reporting years}$$

$$Knowledge\% = \frac{Knowledge}{Expenditure_{ALL}} \times 100$$

$$Knowledge =$$
$$Expenditure\ of\ the\ university\ recorded\ as\ dedicated\ to\ knowledge\ transfer\ activities\ (RON)$$

$$Expenditure_{ALL} = Total\ University\ Expenditure\ (RON)$$

5.5 *Presence in traditional and social media by staff relating knowledge generated at the institution and transfer processes between university and society*

$$Calculation: Platforms\ where$$
$$Platforms =$$
$$Number\ of\ platforms\ in\ traditional\ and\ social\ media\ to\ refer\ to\ knowledge\ transfer\ activities, outputs, and\ inputs$$

Dimension 6: Student Profiles

Indicators selected: **6.1, 6.4, and 6.5**

Indicators excluded: **6.2, 6.3, and 6.6**

6.1 ***Students*** *enrolled in different modes of study as a proportion of total students enrolled*

$$Calculation: \frac{1}{n}\sum_{i=1}^{n} StudentStatus_i\ \ where$$
$$n = Number\ of\ reporting\ years$$

$$StudentStatus = Student_{FULL} + Student_{PART} + Student_{DISTANCE} + Student_{EVENING}$$
$$Student_{FULL} = Number\ of\ students\ enrolled\ full\text{-}time$$
$$Student_{PART} = Number\ of\ students\ enrolled\ part\text{-}time$$
$$Student_{DISTANCE} = Number\ of\ students\ enrolled\ in\ distance\ learning\ modalities$$
$$Student_{EVENING} = Number\ of\ students\ enrolled\ in\ evening\ programs$$

$$Student = Number\ of\ enrolled\ students\ in\ the\ reporting\ year\ (all\ cycles)$$

6.4 *Average fee costs per year at BA and MA levels*

BA Cycle:

$$Calculation: \frac{1}{p}\sum_{i=1}^{p} BAFees_i \ \ where$$

$$p = \ BA\ level\ fees\ (all\ study\ programs)$$

$$BAFees = \ Fees\ for\ all\ study\ programs\ offered\ at\ BA\ level$$

MA Cycle:

$$Calculation: \frac{1}{p}\sum_{i=1}^{p} MAFees_i \ \ where$$

$$p = \ Number\ of\ study\ programs\ offered\ at\ MA\ level$$

$$MAFees = \ MA\ level\ fees\ (all\ study\ programs)$$

6.5 *Proportion of total university budget generated from fee payment*

$$Calculation: \ \frac{1}{n}\sum_{i=1}^{n} Fee\%_i \ where$$

$$n = \ Number\ of\ reporting\ years$$

$$Fee\% = \frac{Fee}{Income} \times 100$$

$$Fee = \ Total\ income\ from\ fee\ payments\ (RON)$$

$$Income = Total\ university\ income\ (RON)$$

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Proiect selectat în cadrul Programului Operațional Capacitate Administrativă, cofinanțat de Uniunea Europeană din Fondul Social European

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