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Assessment guidance for regular evaluation of research and development 2024

1. Regulatory guidelines for the regular evaluation of research and development.

Regular evaluation of research and development activities (hereinafter regular evaluation) is regulated by the following legal acts: Organisation of Research and Development Act (hereinafter 'ORDA'), Higher Education Act, Minister of Education and Research's Regulation no 60 „Specific conditions of and procedure for application for, carrying out and approving the result of a regular evaluation of research and development" (hereinafter 'regulation') and the Directive regarding the formation of evaluation committee and establishing the rules of procedure for performing the evaluation (hereinafter 'directive'), which is approved after the selection of the members of the committee.

According to ORDA, the objective of regular evaluation is to assess the level of the research and development (hereinafter 'R&D') fields of the research and development institutions in periodical rounds, comparing it with the internationally recognised criteria. According to The Statutes of the Estonian Research Council section 2.2.7 regular evaluation is carried out by the Estonian Research Council (hereinafter 'ETAG').

According to ORDA, the period of validity of a positive decision of a regular evaluation is seven years. A positive result of the regular evaluation gives the research and development institution (hereinafter: 'institution') the right to apply for R&D financing from the state budget on the basis stipulated in ORDA and to conduct doctoral studies in the field of research on which the study is based, as stipulated in the Higher Education Act. In accordance with the regulation, a research and development institution or, in the event where evaluation of research and development of a research and development institution belonging to the structure of a legal person is applied for, the legal person in public law or the legal person in private law (hereinafter 'applicant') applies for a regular evaluation. The applicant submits a request for regular evaluation to the Ministry of Education and Research and a copy to the evaluation organiser no later than November 15 of the calendar year preceding the evaluation.

In addition to the legal basis, evaluation is based on a framework of values formulated in the Coalition for Advancing Research Assessment (CoARA) agreement, the San Francisco Declaration on Research Assessment and the Leiden Manifesto. Based on these documents, in the evaluation of research, among other things:

- it is understood that different outputs, practices and activities affect the quality and impact of research. Based on this, the assessment is mainly based on a qualitative assessment, in which the expert opinion (peer review) is central, and the quantitative indicators are used in a responsible, relevant, and meaningful way, with due consideration of the context;
- has an important role in ensuring gender equality, equal opportunities and inclusion;
- aims to abandon the *inappropriate* use of metrics-based indicators of scientific journals and publications, especially the *inappropriate* use of Journal Impact Factor (JIF) and the h-index;
- the use of rankings of research institutions is avoided.

The purpose of regular evaluation is to:

- **assess** the scientific impact, sustainability (including for conducting doctoral studies at universities) and societal impact of R&D fields of the research in the respective research and development institutions;
- **provide feedback** to the scientific community, management bodies of institutions, R&D financing organisations, research and higher education policymakers and the society about the scientific impact, sustainability and societal impact of Estonian R&D.

2. Key terms.

2.1. **The self-evaluation report** is a report prepared by the institution in the Estonian Research Information System (hereinafter ETIS) about the field being evaluated. The self-evaluation report, together with the visit to the institution, is the basis for the evaluation committee to give an assessment and prepare the evaluation report.

2.2. **The evaluation report** is an assessment prepared by the evaluation committee in ETIS based on the institution's self-evaluation report and the visit to the institution, regarding the scientific impact, sustainability and societal impact of the R&D field of the institution being evaluated. In the evaluation report, the evaluation committee makes a proposal to the Minister to grant positive or negative evaluation to the research and development in the corresponding field at the research and development institution. The evaluation report is the basis for the Minister of Education and Research when making an evaluation decision.

2.3. **The evaluation committee** (hereinafter: the committee) is a body of foreign experts in the research and development fields to be evaluated, formed by the Minister of Education and Research to carry out the regular evaluation. The members of the evaluation committee, their duties and working procedures are approved by the Minister of Education and Research by directive.

3. Research areas to be evaluated.

In the regular evaluation, R&D fields are defined according to the 2015 version of the OECD Frascati Manual, and the evaluation is carried out in six R&D fields: 1. Natural Sciences, 2. Engineering and technology, 3. Medical and health sciences, 4. Agricultural and veterinary sciences, 5. Social Sciences, 6. Humanities and the arts.[1]

4. Procedure for carrying out regular evaluation.

4.1. The institution prepares the self-evaluation report(s) on the appropriate ETIS form by the deadline agreed with ETAG.

4.2. Regular evaluation is carried out by the committee in accordance with the procedure stipulated in the Minister's directive and based on this assessment guidance.

4.3. After the committee has been selected and the respective directive signed, ETAG agrees upon a time for the committee's visit together with the institution and the committee. The exact schedule of the visit will be agreed upon no later than 10 working days before the start of the visit. A representative of ETAG and if the Ministry wishes, a representative of the Ministry of Education and Research will participate in the visit as observers.

4.4. During the visit to the institution, the following activities will take place:

• Introduction of the institution in the form chosen by the institution;

[1] List of fields of research and development, adopted on 01.02.2019 Regulation no 2: https://www.riigiteataja.ee/akt/105022019012

• Review of the research infrastructure of the institution where appropriate;

• Interviews with the institution's research staff, incl. with doctoral students where appropriate.

4.5. The institution ensures that the committee can carry out the abovementioned activities.

4.6. The committee evaluates the institution's R&D in the relevant field based on the criteria defined in this guidance based on peer review.

4.7. In the peer review, the members of the committee base their evaluation on the institution's self-evaluation report and the information obtained during visits to the institutions. The committee has the right to request the institution to submit additional materials relevant to the evaluation. The peculiarities of the respective field are taken into account during the evaluation.

4.8. The committee submits the evaluation report in the ETIS environment on a predetermined form, the report is approved by the chair of the committee.

5. R&D evaluation criteria and indicators

The evaluation criteria that are related to the evaluation purpose are the following (see table 1):

5.1. Scientific Impact of Research
5.2. Sustainability of Research
5.3. Societal Impact of Research.

6. Considering the needs of the institution

In the self-evaluation report, the institution may ask the committee for feedback on up to three more specific R&D aspects that are important to the institution at the given time. Such aspects can be, for example, different foci in the institution's R&D related to the peculiarities of the field; the societal impact of the field (success stories, etc.); proposals for R&D development directions; highlighting outstanding results, etc. aspects related to research.

7. Evaluation report

On the basis of the institution's self-evaluation report, the institution's visit and, if necessary, additional data requested from the institution, the committee gives an undifferentiated assessment (either exceeds or does not exceed the threshold level) in ETIS on the appropriate form in terms of three assessment criteria (scientific impact, sustainability, social impact).

8. Consolidated evaluation

8.1 The committee decides on a consolidated evaluation based on the evaluation criteria and the descriptions of the threshold levels in each criterion. The consolidated evaluation is given for the evaluated field in the respective institution on a non-differentiated assessment scale.

In addition, the committee gives the institution

- recommendations (e.g. for a structural unit)

o for research cooperation with domestic and foreign partners;
o to connect R&D with the society;
o to increase R&D impact;
o for the development of doctoral studies;
o in other aspects related to R&D in the scientific field that are important in the opinion of the evaluation committee;

- feedback on additional aspects brought up by the institution in the self-evaluation report.

8.2 In the consolidated evaluation, if necessary, the sub-fields[2] of the evaluated field and/or structural units, in which, in the committee's opinion, significant deficiencies appeared and/or which, in the committee's opinion, were at an outstandingly good level, are mentioned explicitly.

8.3 If even one of the evaluation criteria does not exceed the threshold level, the evaluation proposal is negative.

8.4 In the consolidated evaluation, the evaluation committee makes the following proposal to the Minister of Education and Research:

- positively evaluate the institution's R&D in the relevant field; or
- evaluate the institution's R&D activities in the relevant field negatively.

The committee must justify the proposal.

9. Evaluation decision

9.1 The Minister of Education and Research, based on a reasoned proposal in the evaluation report by the committee, confirms with a directive the regular evaluation decision to evaluate the institution's R&D in the relevant field positively or negatively.

9.2 The period of validity of a positive decision of a regular evaluation is seven years or until the decisions of the next regular evaluation round are confirmed.

9.3 According to the ORDA in force, institutions that have received a negative evaluation decision have the opportunity to correct the deficiencies and request a re-evaluation for a fee.

10. Follow-up activities

ETAG asks the evaluation committee and the institution for **feedback** on the evaluation process.

[2] Frascati Manual fields of research

Table 1. Evaluation criteria, indicators and threshold description of the field evaluated.

In the case of all evaluation criteria and indicators, the committee considers in its assessment the peculiarities of the field being evaluated. In the creative fields, in addition to R&D, artistic research is also considered, but it does not fully replace R&D. The source of the data underlying the quantitative indicators, the reference values in relevant cases and the party providing the corresponding data are given in Table 2.

Evaluation criterion	Description	Quantitative indicators	Qualitative indicators (free form text descriptions)	Threshold level
1. Scientific Impact of Research	Scientific impact is understood as the **amount and impact of R&D outputs** in an international field-specific comparison.	1.1 Number of peer-reviewed publications per R&D employee (full-time equivalent); 1.2 Share of publications included in the 10% most cited publications (InCites indicator, % Documents in Top 10%); 1.3. Share of publicly available publications (Open Access) (%); 1.4. Impact of articles (InCites indicator; Category Normalized Citation Impact).	1.5. Institution's description of the 10 most impactful R&D results of the evaluation period, if necessary, add up to 10 most important scientific publications with links to full texts; 1.6 Description of intellectual property granted; 1.7. Institution's opinion regarding aspects that need to be improved in the field of scientific impact of research.	Majority of R&D results are at a good international level: the results attract international interest in the field. Most of the publications have been published by well-known international publishing houses and/or in well-known international professional journals. The number of international peer-reviewed publications per R&D employee has remained on the same level or increased. There are publications that are among the 10% most cited scientific publications in the world and/or the institution owns intellectual properties granted. The results showing the institution's scientific impact

				have consistently and systematically improved. The facts presented by the institution in the self-evaluation report confirm the scientific impact of R&D activities.
Evaluation criterion	Description	Quantitative indicators	Qualitative indicators	Threshold level
2. Sustainability	Sustainability is defined as the **ability of the institution to ensure R&D** at a good international **level** in the relevant research field in the next evaluation period.	2.1. Number of R&D employees by types of position (R) (full-time equivalent); 2.2. Proportion of women (%) and men (%) among R&D employees; 2.3. Number of doctoral students and PhDs defended (where relevant); 2.4. Volume and structure of R&D revenues (incl domestic financing); foreign funding (incl the private sector, the EU framework programmes).	2.5. Institution's description of the most important facts showing sustainability and potential of R&D.; 2.6. Sufficiency and condition of R&D infrastructure; 2.7. Databases and collections; 2.8. Connections between R&D activities and doctoral studies (where relevant); 2.9. Principles of ensuring equal opportunities in the institution 2.10. Institution's opinion regarding aspects that need to be improved in the field of sustainability.	The results showing sustainability of the institutions have consistently and systematically improved. The development and management of R&D in the field is clear and effective. Measures to ensure the funding of the field, the volume of funding and the composition of R&D employees testify to the sustainability of R&D in the future. Most research directions in the field have clearly expressed potential from a scientific, socio-economic and environmental perspective. The infrastructure is in good condition and creates very good conditions for R&D in

				the field and, in the case of universities, for conducting doctoral studies. (For universities) The R&D, that form the basis of all doctoral programmes related to the field, is at a good international level. The facts presented by the institution in the self-evaluation report confirm the sustainability of R&D activities.
Evaluation criterion	Description	Quantitative indicators	Qualitative indicators	Threshold level
3. Societal Impact of Research	**The coherence of R&D activities with what is happening in society** is defined as social impact, including the connection with topical problems in society. The coherence of R&D activities with higher education at the first two levels is also considered as societal impact (the connection with the third level of higher education is evaluated in the context of sustainability).	3.1. The financial volume of contracts with private and public sector (domestic and foreign) per R&D employee (full time equivalent); 3.2. The number of R&D employees involved in advisory bodies or working groups (based on the information provided in the self-evaluation).	3.3. Institution's description of the most important evidence-based examples of the societal impact of R&D activities; 3.4. Generalised description of continuing education courses and consultations aimed at the general public; 3.5. Participation of R&D employees in state and/or business consultations related to R&D activities (e.g. participation in advisory bodies, administrative bodies, etc.);	The results showing the institution's societal impact have consistently and systematically improved. In R&D of the field, the developments and needs of society are taken into account in several research directions (e.g. through the research of current topics or commissioned applied research, through the participation of R&D employees in important development and decision-making bodies outside the

			counselling on important topics for the society; 3.6. Participation of R&D employees in higher education activities (incl lectures, seminars and practicums, both in and outside own institution, and supervision of student theses); 3.7. Organisation of cooperation events aimed at the society or community (for example, an R&D institution as a partner that brings together parties from the private and public sectors to discuss topical issues); 3.8. Evidence-based examples of popularisation and dissemination of R&D results in society; 3.9. Participation of R&D employees in national and international working groups and networks (list the names of the organisations and bodies); 3.10. Publicly available publications, databases, products/services created as a result of R&D activities;	institution, in the form of important societal developments based on R&D results, etc.). As a result of R&D activities in the field, products/services have been created for society. The selection of research topics is also based on societal and global significance, and discussions are initiated on current topics. Some R&D employees are involved in higher education as lecturers, practicum supervisors and/or thesis supervisors.

			3.11. Other facts showing R&D societal impact and cooperation; 3.12. Institution's opinion regarding aspects that need to be improved in the field of societal impact of research.	

Table 2. The source of the data underlying the quantitative indicators used in the assessment, the reference values in relevant cases and the party providing the corresponding data. Table 2 is intended as background material, and the reference values of the presented quantitative indicators are not set as an evaluation threshold level. The evaluation threshold levels for regular evaluation are described in Table 1 of the evaluation guidance.

Quantitative indicator	Source of data	Reference value(s)	Party providing data
1.1. Number of peer-reviewed publications per R&D employee (full time equivalent) (2018-2023);	a) Number of publications from InCites database, institutions may add in addition publications in ETIS with classification 1.2 and 2.1. All publications must be related to the institution evaluated. b) Number of R&D employees – numbers provided by the institution.	None	ETAG/institution evaluated.
1.2. Share of publications included in the 10% most cited publications (2018-2023)	InCites indicator *% Documents in Top 10%*	1. Natural Sciences 13.3 2. Engineering and technology 9.8 3. Medical and health sciences 21.0 4. Agricultural and veterinary sciences 13.9 5. Social Sciences 12.1 6. Humanities and the arts 11.1	ETAG

1.3 Share of publicly available publications (Open Access) (%) (2018-2023)	InCites indicator % All Open Access Documents	1. Natural Sciences 63.6 2. Engineering and Technology 50.7 3. Medical and Health Sciences 71.4 4. Agricultural and Veterinary Sciences 61.0 5. Social Sciences 44.2 6. Humanities and the Arts 42.0	ETAG
1.4 Impact of articles	InCites indicator *Category Normalized Citation Impact*	1. Natural Sciences 1.4 2. Engineering and Technology 1.0 3. Medical and Health Sciences 2.0 4. Agricultural and Veterinary Sciences 1.3 5. Social Sciences 1.3 6. Humanities and the Arts 1.6	ETAG
2.1. Number of R&D employees by type of position (R) (full-time equivalent)	Data from institutions	-	Institution evaluated
2.2. Gender balance of R&D employees	Data from institutions	-	Institution evaluated
2.3. Number of doctoral students and PhDs defended	ETIS	-	ETAG
2.4. Volume and structure of R&D revenues: domestic financing (including the private sector); foreign funding (including the private sector and EU framework programmes) (2018-2023)	ETIS	Estonia's average volume of revenue from research projects per R&D employee with a doctoral degree in the evaluated institution in 2018-2023. Calculations are performed by ETAG based on the data provided by the evaluated institutions. 1. Natural Sciences 2. Engineering and Technology 3. Medical and Health Sciences 4. Agricultural and Veterinary Sciences 5. Social Sciences	ETAG

		6. Humanities and the Arts	